

# An illustrated catalogue of South American species of *Omorgus* Erichson, 1847 (Coleoptera, Trogidae, Omorginae) including a neotype designation and taxonomical changes

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## Abstract

An illustrated catalogue of South American species of the genus *Omorgus* Erichson is presented. Based on this study we propose the following taxonomic changes: *Omorgus* (*Omorgus*) *capillaceus* Scholtz, 1990, **syn. nov.** and *Omorgus* (*O.*) *lucidus* Pittino, 2010, **syn. nov.** are proposed as junior subjective synonyms of *Omorgus* (*O.*) *fuliginosus* (Robinson, 1941) and *Omorgus* (*O.*) *ciliatus* (Blanchard, 1847), respectively. Lastly, we designated a male neotype for the ubiquitous New World species *Trox suberosus* Fabricius, 1775 to replace the missing type.

## Key Words

Keratin feeding, Omorgini, Scarabaeoidea, South America, taxonomy, type specimens

## Introduction

*Omorgus* Erichson, 1847 (Scarabaeoidea, Trogidae) is a diverse and widespread genus of Trogidae MacLeay, 1819 with c. 150 valid names (Scholtz 1986a; Strümpher et al. 2016; Zidek 2017). After the morphological phylogeny study conducted by Scholtz (1986a) and later supported by Strümpher et al. (2014 – molecular phylogeny), three subgenera are recognized within *Omorgus*: *Afromorgus* Scholtz, 1986a with 57 species distributed throughout the sub-Saharan Africa, Oriental, and Palearctic regions (Kalawate and Strümpher 2024); the monotypic *Haroldomorgus* Scholtz, 1986a [*Omorgus* (*H.*) *batesi* Harold, 1872] endemic to South America; and the nominotypical *Omorgus* with 94 species reported from the Neotropical, Nearctic, Palearctic, Oriental and Australasian regions (Huchet and Costa-Silva 2018; Costa-Silva et al. 2021; Strümpher and Kalawate

2023). For a more comprehensive taxonomical overview of the genus, see Strümpher et al. (2016).

From South America, 17 species of *Omorgus* are recognized after the studies carried out by Vaurie (1962), Scholtz (1990), Pittino (1987, 2010), and Huchet and Costa-Silva (2018), where redescrptions, taxonomic changes, and identification keys for the species can be found. More recently, Costa-Silva et al. (2021) have addressed a modern revision of Brazilian species of *Omorgus*, presenting for the first time a high-resolution image of all name-bearing types (with the exception of *Omorgus suberosus* – see results) of the group.

Thus, our main goal is to present an illustrated catalogue of those name-bearing type specimens of South American species of *Omorgus* whose images have never been published before. Our results, as well as the publication by Smith (2017) and Costa-Silva et al. (2021),

include all South American *Omorgus* types available for consultation. This study will provide researchers around the World who are interested in the South American *Omorgus* the opportunity to examine the type specimens through high-definition photography, subsidizing the taxonomic and nomenclatural stability of the names studied in the future. Additionally, after studying all type specimens of *Omorgus* from South America, we propose here *Omorgus* (*O.*) *lucidus* Pittino, 2010 as a junior subjective synonym of *Omorgus* (*O.*) *ciliatus* (Blanchard, 1847), and *Omorgus* (*O.*) *capillaceus* Scholtz, 1990 as a junior subjective synonym of *Omorgus* (*O.*) *fuliginosus* (Robinson, 1941). Also, in order to fix the problem regarding the missing type specimen of *Trox suberosus* Fabricius, 1775 from Joseph Banks collection (see Hielkema and Hielkema (2019) and Costa-Silva et al. (2021)), a neotype is designated in accordance with Art. 75.3 of the International Code of Zoological Nomenclature (ICZN 1999).

## Material

A total of 899 specimens of *Omorgus* (including types and non-type material) from the institutions listed below were examined. The curators are presented in brackets.

<b>CEMT</b>	Coleção Entomológica de Mato Grosso Eurides Furtado, Cuiabá, Mato Grosso, Brazil (Fernando Z. Vaz-de-Mello)
<b>CMNC</b>	Canadian Museum of Nature, Ottawa, Canada (Robert Anderson and François Génier)
<b>CMNCH</b>	Carnegie Museum of Natural History, Pittsburgh, Pennsylvania, United States (Robert Androw)
<b>CNC</b>	Canadian National Collection of Insects, Ottawa, Canada (Patrice Bouchard)
<b>CVMD</b>	Collection of Víctor Manuel Diéguez [Private Collection], Peñalolén, Santiago, Chile (Víctor Manuel Diéguez).
<b>DZUP</b>	Museu de Entomologia ‘Pe. Jesus Santiago Moure’, Universidade Federal do Paraná, Curitiba, Paraná, Brazil (Cibele Stramare Ribeiro-Costa).
<b>IADIZA</b>	Instituto Argentino de Investigaciones de Zonas Áridas, Mendoza, Mendoza, Argentina (Gustavo Flores and Sergio Roig).
<b>IFML</b>	Instituto Fundación Miguel Lillo, Tucumán, Argentina (Emília Perez).
<b>LACM</b>	Los Angeles County Museum of Natural History, Los Angeles, California, United States (Brian Brown)
<b>MACN</b>	Museo Argentino de Ciencias Naturales ‘Bernardino Rivadavia’, Buenos Aires, Argentina (Pablo Mulieri).
<b>MCZC</b>	Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts, United States (Rachel Hawkins)

<b>MNHN</b>	Muséum national d’Histoire naturelle, Paris, France (Olivier Montreuil and Antoine Mantilleri)
<b>MZSP</b>	Museu de Zoologia da Universidade de São Paulo, São Paulo, Brazil (Sônia Casari).
<b>NHMB</b>	Naturhistorisches Museum, Basel, Switzerland (Christoph Germann)
<b>NHMUK</b>	The Natural History Museum, London, United Kingdom (Maxwell Barclay)
<b>RBINS</b>	Royal Belgian Institute of Natural Sciences, Brussels, Belgium (Alain Drumont and Wouter Dekoninck)
<b>RPMI</b>	Collection of Riccardo Pittino [Private Collection], Milan, Italy (Riccardo Pittino).
<b>ZMUK</b>	Zoologisches Museum, Universität Kiel, Kiel, Germany (Michael Kuhlmann)

## Methods

Label data for primary type specimens are transcribed *ipsis litteris* in quotation marks (“...”). Forward slashes “/” were used to indicate a new line of text on the same label. Comments and additional information are provided in square brackets “[...]”. All handwritten information is underlined. The non-type material follows the format present by Costa-Silva et al. (2021): COUNTRY (in capital letters); followed by **Department, province of state name** (in bold letters); city or specific locality (when mentioned in the label); metres above sea level (when mentioned), geographical coordinates (when mentioned), date, name of the collector(s), number of examined specimens, gender and depository. The countries, first-order political divisions and cities and/or specific localities are given in alphabetical order.

All images taken by the authors were made using a Leica model m205C stereomicroscope with MC190 HD image capture system. Photographs that were not taken by the authors are indicated in the captions of the respective images with the respective copyright of the author and the museum.

## Results

### Systematics

#### Order Coleoptera

#### Family Trogidae MacLeay, 1819

#### Subfamily Omorginae Nikolajev, 2005

#### Tribe Omorgini Nikolajev, 2005

#### Genus *Omorgus* Erichson, 1847

**Note.** For morphological description and diagnosis, see Vaurie (1962 – as “species group *suberosus*”), Scholtz (1990), and Strümpher et al. (2016).

**Type species.** *Trox suberosus* Fabricius, 1775 (by subsequent designation, Lacordaire, 1856).

**Identification key.** The identification keys of Vaurie (1962) and Scholtz (1990) can be used to identify South American species of *Omorgus*, while Costa-Silva et al. (2021) can be used for Brazilian species.

## Catalogue of South American species of *Omorgus*

### *Omorgus (Haroldomorgus) batesi* (Harold, 1872)

*Trox batesi* Harold, 1872: 126 (original description); Arrow 1912: 54 (catalogue); Blackwelder 1944: 218 (catalogue); Vaurie 1962: 154 (redescription).

*Trox (Omorgus) batesi*: Scholtz 1982: 8 (catalogue).

*Omorgus (Haroldomorgus) batesi*: Scholtz 1986a: 362 (phylogenetics); Scholtz 1990: 1418 (redescription); Zidek 2013: 7 (catalogue); Strümpher et al. 2014: 549 (systematics); Strümpher et al. 2016: 62 (systematics); Zidek 2017: 98 (catalogue); Hielkema and Hielkema 2019: 10 (checklist for the Guianas); Costa-Silva et al. 2021: 1997 (review of Brazilian species).

*Omorgus batesi*: Deloya 2005: 122 (checklist).

**Type specimen examined.** *Holotype* (♂ MNHN). See Costa-Silva et al. (2021: 1997) for high-quality images of the type specimen. **Type locality:** “Amazonestrom” [Amazonas River].

**Geographic distribution.** Argentina, Bolivia, Brazil and Paraguay (Zidek 2017; Costa-Silva et al. 2021).

**Non-type examined material (four specimens additionally to Scholtz (1990) and Costa-Silva et al. (2021)).** BRAZIL – Amazonas • 1; Parana da Eva; 8 Nov. 1969; J.M. & B.A. Campbell leg.; CNC. – Mato Grosso • 1; Juina; 1 Oct. 2022; K.R. Ferreira leg.; CEMT • 1; Santa Cruz do Xingu, Faz. da Ilha; 9°45'41"S, 52°15'41"W; UV light trap; 11–17 Jan. 2024; D.F. Rodrigues & T.I. Victor-da-Silva leg.; CEMT. – Rio de Janeiro • 1♀; Magé, 70 km N [north] of Rio de Janeiro; 15 Oct.–10 Nov. 1999; W. Grosser leg.; NHMUK.

**Note.** The monotypic subgenus *Haroldomorgus* Scholtz, 1986a was established to accommodate *Trox batesi* Harold, 1872, following a morphological phylogenetic analysis aimed at elucidating the suprageneric relationships within Trogidae (refer to Scholtz, 1986a for details). One of the most distinctive features of *Omorgus (Haroldomorgus)* species is a complete absence of tubercles or ridges on the pronotum and elytra. Additionally, this species exhibits an oval-shaped scutellum that is not constricted at the base, which distinguishes it from the typical modern concept of *Omorgus* species. Following a morphological phylogenetic analysis conducted by some of the authors (VCS, WPS, and FZVM – Costa-Silva et al. in press), the genus *Omorgus* was recovered to be paraphyletic, restoring *Haroldomorgus* as a sister group to *Omorgus* + *Polynoncus*. In the first and only molecular phylogeny of Trogidae performed to date, by Strümpher et al. (2014), no specimens of *Omorgus (Haroldomorgus) batesi* were used in the analysis. However, we have now obtained fresh specimens to revisit the molecular analysis

and finally test the Scholtz’s (1986a) hypothesis and the position of *Haroldomorgus* within Trogidae.

### *Omorgus (Omorgus) badeni* (Harold, 1872)

*Trox badeni* Harold, 1872: 83 (original description); Arrow 1912: 54 (catalogue); Vaurie 1962: 147 (as syn. of *Omorgus borrei*); Scholtz 1982: 9 (as syn. of *Omorgus borrei*).

*Omorgus (Omorgus) badeni*: Scholtz 1990: 1416 (revalidated, redescribed and lectotype designated); Zidek 2013: 7 (checklist); Zidek 2017: 98 (checklist); Costa-Silva et al. 2021: 2001 (review of Brazilian species).

*Omorgus badeni*: Morrone 2001: 57 (mention, biogeography); Deloya 2005: 122 (checklist); Morrone 2014: 57 (mention, biogeography).

**Type specimen examined.** *Lectotype* (RBINS). See Costa-Silva et al. (2021: 2001) for high quality images of the type specimen. **Type locality:** “Ceará, Brazil”.

**Geographic distribution.** Brazil. For details of distribution, see Costa-Silva et al. (2021). Morrone (2001, 2014) report this species from “Northern Colombia and northwestern (sic!)”, without specific locality. Although plausible, so far, no specimen of *Omorgus (O.) badeni* from Colombia has been examined by the authors.

### *Omorgus (Omorgus) borrei* (Harold, 1872)

*Trox borrei* Harold, 1872: 84 (original description); Bruch 1911: 193 (checklist); Arrow 1912: 54 (catalogue); Blackwelder 1944: 218 (catalogue); Vaurie 1962: 147 (redescription).

*Trox (Omorgus) borrei*: Scholtz 1982: 9 (catalogue).

*Omorgus (Omorgus) borrei*: Scholtz 1986a: 361 (phylogenetics); Scholtz 1990: 1417 (redescription); Zidek 2013: 8 (checklist); Zidek 2017: 98 (checklist); Costa-Silva et al. 2021: 2002 (review of Brazilian species, lectotype designation).

*Omorgus borrei*: Deloya 2005: 122 (checklist, as “*borreri*”); Morrone 2014: 78 (mention, biogeography).

**Type specimen examined.** *Lectotype* (RBINS). See Costa-Silva et al. (2021: 2002) for high-quality images of the type specimen. **Type locality:** “Montevideo, Uruguay”.

**Geographic distribution.** Argentina, Bolivia, Brazil, Paraguay and Uruguay (Vaurie 1962; Scholtz 1990; Costa-Silva et al. 2021).

**Non-type examined material (23 specimens additionally to Costa-Silva et al. 2021).** ARGENTINA – Chaco • 1♂ and 1 unsexed; Charata; Dec. 1995; S. Bolle leg.; NHMUK • 1; Pampa del Infierno; Set. 1982, A. Martinez leg.; CMNC. – Corrientes • 1♀; Bella Vista, Bords du Parana; Dec. 1903, E.R. Wagner leg.; MNHN • 1; 15 Mar. 1827–20 Apr. 1828, d’Orbigny leg.; MNHN. – Misiones • 1; 1932; K.J. Hayward leg. NHMUK. – Santa Fe • 1; Villa Ana; Nov. 1925, K.J. Hayward leg.; NHMUK. – Santiago del Estero • 1♂ and 7 unsexed; El Pinto; Dec. 1956; CNC • 1♀; Icaño, Edges of Rio Salado; Dec. 1910, E.R. Wagner leg.; MNHN.



BOLIVIA • 1; Jansen leg.; NHMUK.

BRAZIL • 1; Matto Grosso (sic!); 1886; P. Germain leg.; MNHN.

PARAGUAY – **Presidente Hayes** • 2; Nanawa, “Paraguayan Chaco”; Mar. 1927; G.S. Carter leg.; NHMUK.

URUGUAY – **Artigas** • 1; 20 km SE Artigas; 30°31'S, 56°22'W; 27 Dec. 2002, S. & J. Peck leg.; CMNC. – **Montevideo** • 1; Montevideo; MNHN. – **Without specific locality** • 1 ♀; MNHN.

***Omorgus (Omorgus) candezei* (Harold, 1872)**

Fig. 1

*Trox candezei* Harold, 1872: 113 (original description); Burmeister 1876: 259 (as syn. of *Trox ciliatus*); Bruch 1911: 193 (checklist – as syn. of *Trox ciliatus*); Arrow 1912: 55 (catalogue – as syn. of *Trox ciliatus*); Blackwelder 1944: 218 (checklist – as syn. of *Trox ciliatus*); Vaurie 1962: 153 (redescription).

*Trox (Omorgus) candezei*: Scholtz 1982: 9 (catalogue).

*Omorgus candezei*: Scholtz 1990: 1406 (redescription); Diéguez and Gómez 2004: 94 (checklist); Deloya 2005: 122 (checklist); Gómez 2008: 514 (key and notes for Argentinean species); Zidek 2013: 8 (checklist); Zidek 2017: 99 (checklist); Smith 2017: 84 (notes, distribution).

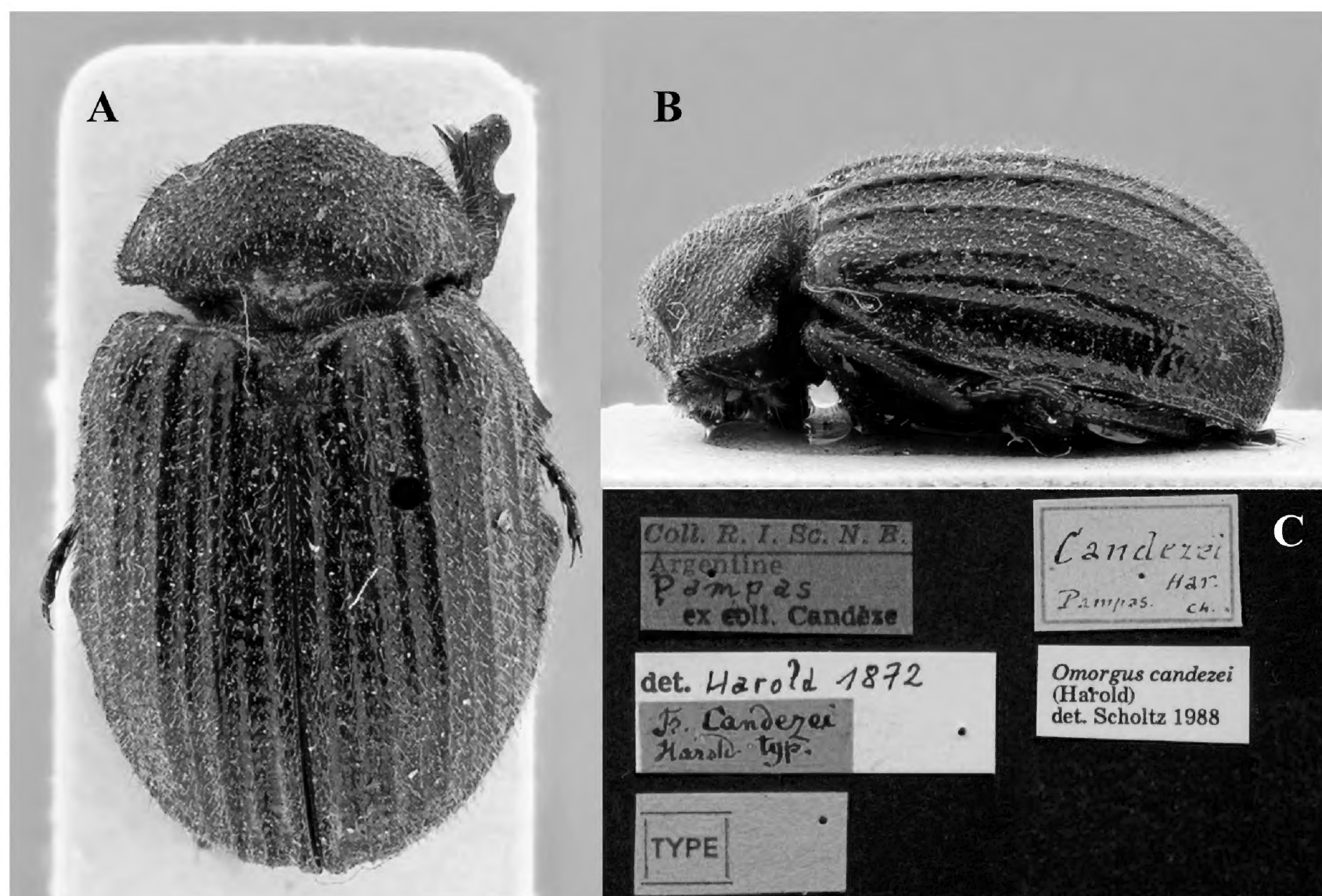
**Type specimen examined.** *Holotype, by monotypy* (RBINS – Fig. 1). First label [red, typeset]: “Coll. R. I.

Sc. N. B. / Argentine / Pampas / ex coll. Candèze”. Second label [white]: “det. Harold 1872 / [yellow card, Edgar von Harold’s handwriting] Tr. Candezei / Harold typ.”. Third label [red, typeset]: “TYPE”. Fourth label [white aged with green border]: “Candezei / Har. / Pampas / Ch.”. Fifth label [white, printed]: “*Omorgus candezei* / (Harold) / det. Scholtz 1988” (Fig. 1C). **Type locality:** “die Pampas von Südamerika” [the Pampas of South America].

**Note.** According to Harold (1872: 114), the holotype was found in a factory in Verviers (Belgium) in a consignment of sheep’s wool originally from the Pampas region (Argentina).

**Geographic distribution.** Argentina (Vaurie 1962; Scholtz 1990; Smith 2017).

**Non-type examined material (15 specimens).** ARGENTINA – **Buenos Aires** • 1; C. Bruch leg.; MACN. – **Córdoba** • 1; [Villa] Yacanto, A. Stevenin leg.; MACN • 1; Calamuchita, “El Sauco”; Apr. 1959, M.J. Viana leg.; CVMD. – **Mendoza** • 1; Santa Rosa, Reserva de Biosfera Ñacuñan; 22–25 Mar. 2010; G. Arriagada & R. Garcez leg.; CVMD • 1; Santa Rosa, Reserva de Biosfera Ñacuñan; 11–13 Dec. 2002; V.M. Diéguez leg.; IADIZA. – **Río Negro** • 1; Río Colorado; Dec. 1963; Bachmann leg.; CMNC. – **Río Negro** • 1; Village de Patagones [=Viedma]; Set. 1829; D’Orbigny leg.; MNHN. – **San Luis** • 2; 18 km S Ariona; 18–26 Jan. 1982; H. & A. Howden leg.; CMNC • 1; Arizona; Fev. 1980; M.J. Viana leg.;



**Figure 1.** Holotype of *Trox candezei* Harold, 1872 (now *Omorgus candezei*). **A.** Habitus in dorsal view; **B.** Habitus in lateral view; **C.** Labels. Photos by Jonathan Brecko (RBINS). Length of specimen: 10.5 mm.

CVMD • 1; Quines; 24 Nov. 1995; Flores & Roig leg.; CVMD • 1; San Geronimo; Fev. 1914; M.J. Viana leg.; CVMD. – **Santa Fe** • 1; Weiser leg.; MACN. – **Santiago del Estero** • 1; Lago Mayo; 22 Mar.–22 May 1957, Golbach leg.; IFML. – **Tucumán** • 1; A. Breyer leg.; MACN.

***Omorgus (Omorgus) ciliatus* (Blanchard, 1847)**

Fig. 3

*Trox ciliatus* Blanchard, 1847: 190 (original description); Harold 1869: 1088 (catalogue); Harold 1872: 112 (redescription); Bruch 1911: 193 (checklist); Arrow 1912: 54 (catalogue); Blackwelder 1944: 218 (catalogue – as “*ciliata*”); Vaurie 1962: 152 (redescription).

*Trox (Lagopelus) ciliatus*: Burmeister 1876: 258, 265 (key and diagnosis); Preudhomme de Borre 1886: 59 (key and comments).

*Trox (Omorgus) ciliatus*: Scholtz 1982: 9 (catalogue).

*Omorgus ciliatus*: Scholtz 1990: 1405 (redescription); Diéguez and Gómez 2004: 94 (checklist); Deloya 2005: 122 (checklist); Gómez 2008: 514 (key for Argentinean species); Zidek 2013: 8 (checklist); Zidek 2017: 99 (checklist); Smith 2017: 85 (lectotype designation).

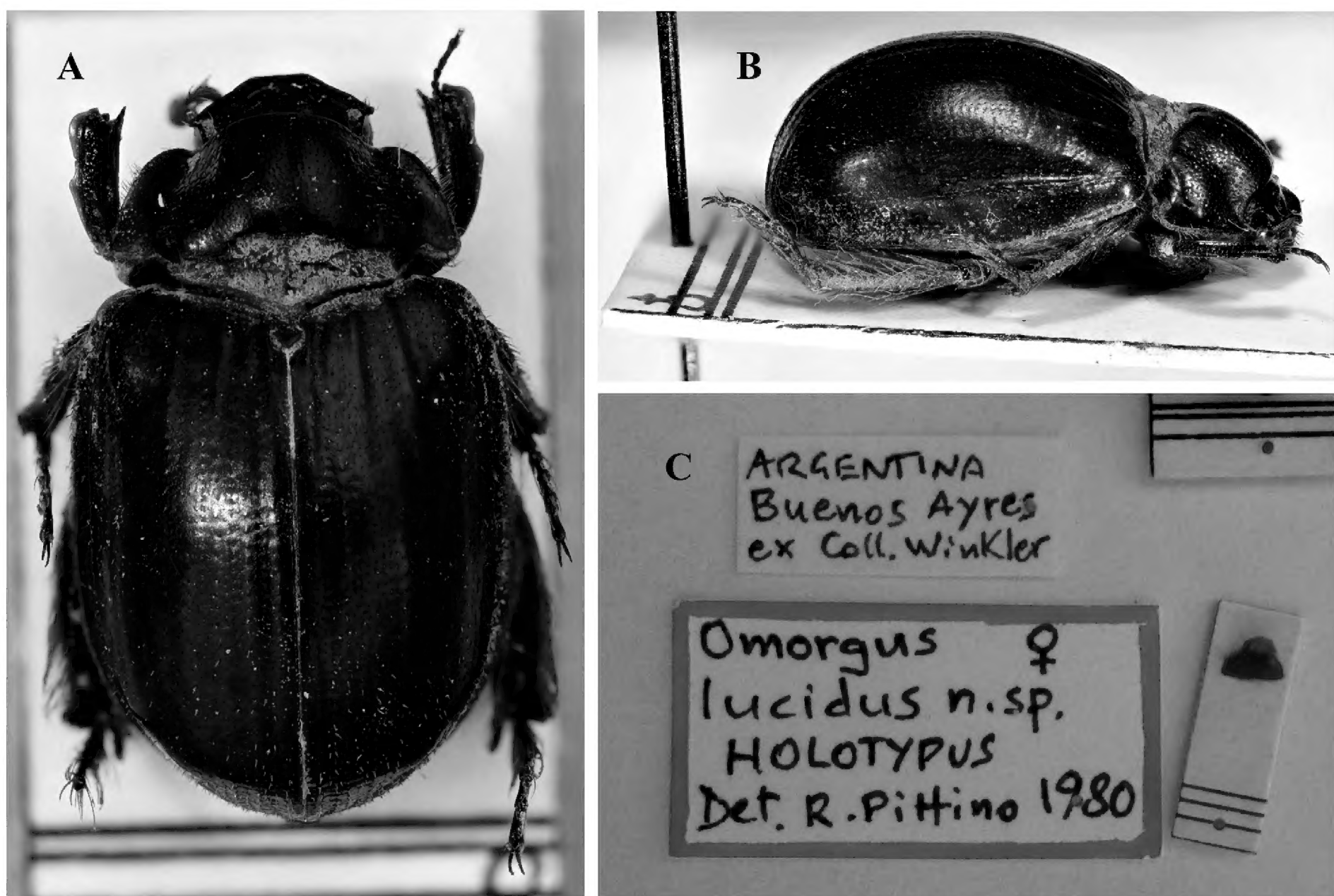
*Omorgus lucidus* Pittino, 2010 (new synonym); Zidek 2013: 12 (checklist); Zidek 2017: 103 (checklist).

**Type specimen examined.** *Lectotype* (MNHN). See Smith (2017: 2085) for high-quality images of the type specimen. **Type locality:** “village the Patagones” [=Viedna, Río Negro, Argentina].

**Type specimen of *Omorgus (Omorgus) lucidus* Pittino, 2010 (new synonym) examined.** *Holotype, by monotypy* (♀ RPMI – Fig. 2). First label [white, Riccardo Pittino’s handwriting]: “ARGENTINA / Buenos Ayres / ex Coll. Winkler”. Second label [white with red border, Riccardo Pittino’s handwriting]: “*Omorgus* ♀ / *lucidus* n. sp. / HOLOTYPUS / Det. R. Pittino 1980” (Fig. 2C). **Type locality:** “Buenos Ayres” [=Buenos Aires], Argentina.

**Remarks.** *Omorgus lucidus* Pittino, 2010 was described to accommodate a single female specimen closely resembling *Omorgus ciliatus* (Blanchard, 1847: 190), from “Buenos Ayres” (Argentina) (see Pittino 2010: 80). According to the author, both species are distinguished by “several minor characters” that include the form of clypeal edge, punctures of the forebody and elytral sculpture (which is visible in *Omorgus ciliatus* and without any trace of tubercle in *Omorgus lucidus*, according to the author). However, Trogidae species tend to show great intraspecific morphological variation (Costa-Silva, pers. communication) and we deem that *Omorgus lucidus* morphology falls within the intraspecific variability of *O. ciliatus* for the reasons specified below.

The diagnostic characteristics cited by Pittino (2010) to separate *O. lucidus* from *O. ciliatus*, include the shape of clypeal edge, punctures of the forebody and mainly the elytral sculpture. These features are dubious and, in our opinion, do not allow to confirm the validity of this species based on only a single female specimen, considering the morphological variation in Trogidae.



**Figure 2.** Holotype of *Omorgus lucidus* Pittino, 2010. **A.** Habitus in dorsal view; **B.** Habitus in lateral view; **C.** Labels. Photos by Alberto Ballerio (Brescia). Length of specimen: 13.8 mm.



During an investigation of many South American and European collections, more than 170 specimens of proper *O. ciliatus* (according to the description provided by Scholtz 1990: 1405) were examined, being 25 males dissected to study. All specimens were studied considering the external and internal morphology, beyond the photographs of both type-species of *O. lucidus* (Fig. 2) and *O. ciliatus* (see Smith 2017: 2085).

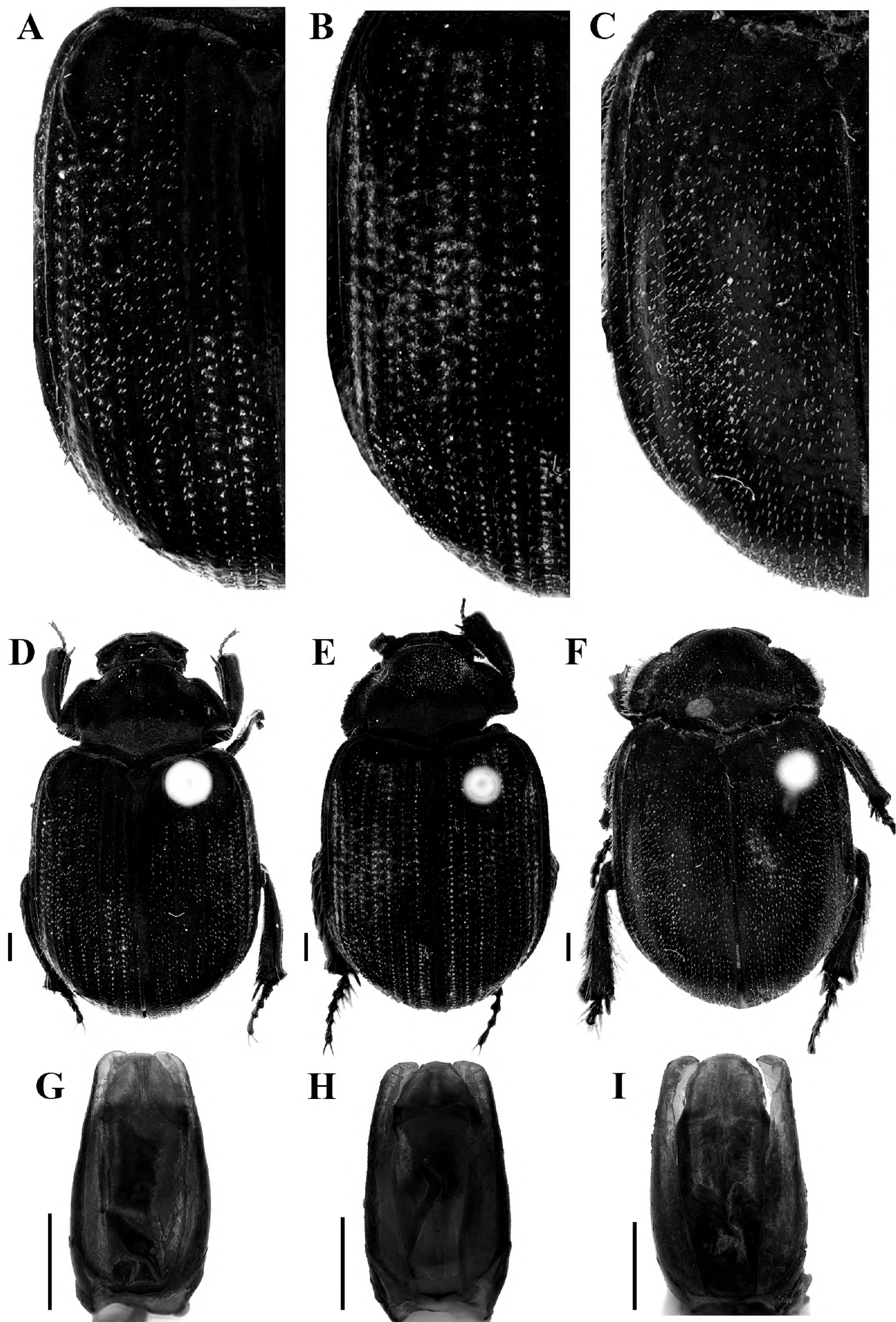
In conclusion, we found a great variability in *O. ciliatus* for morphological characters used by Pittino (2010) as diagnostic for *O. lucidus*, as for example, the elytral sculpture (Fig. 3A–F). According to the author, the elytra of *O. lucidus* are “scarcely convex with no tubercles” and, after our study, we agree with the author’s statement. However, this character state is also found in a few specimens of *O. ciliatus*, as shown in Fig. 3A–C, whose aedeagus was identical to the one of the more typical *O. ciliatus* (Fig. 3G–I). Therefore, we deem that *Omorgus (Omorgus) lucidus* Pittino, 2010 to be a junior subjective synonym of *Omorgus (O.) ciliatus* (Blanchard, 1847), that presents a wide distribution in Argentina.

**Geographic distribution.** Argentina and Bolivia [?]. We have examined only one specimen at NHMUK, which bears a small label inscribed ‘Bolivia’ and another label with the accession number ‘67-45’. This number corresponds to a data entry in the museum’s book, which refers to a donation made by Edward Wesley Janson (1822–1891) around 1867. This is probably the same specimen previously studied by Vaurie (1962). However, we treat this single record of *Omorgus ciliatus* from Bolivia with caution until new and reliable data becomes available.

**Non-type examined material (171 specimens).** ARGENTINA – **Buenos Aires**, • 1; Baía Blanca; C. Bruch leg.; MACN • 1; Carmen de Patagones; MACN • 1; Medanos; 11 Nov. 1946; Hayward y Willink leg.; IFML. – **Catamarca** • 2; 120 km N Belén; 26°59'44"S, 66°18'48"W; 3 Feb. 2009; V.M. Diéguez & G. Arriagada leg.; CVMD • 4; Campo Posuelo, 60 km S Punta de Balasto; 8 Feb. 1997; G. Arriagada leg.; CVMD • 2; Punta Balasto; 18 Jan. 1997; G. Arriagada leg.; CVMD • 2; Recreo; Dec. 1928; IFML • 1; María; 27 Feb. 1992; A. Ugarte leg.; NHMUK • 1; C. Bruch leg.; 1 MACN. – **Chubut** • 2; Biedma, Puerto Madryn, 4 km W costa; 42°47'8"S, 65°2'56"W; 11 Nov. 2011; G. Chelli leg.; IADIZA • 2; Estepa, Trelew; 10 Apr. 2010; D. Rojas Lanus leg.; CVMD • 1; Paleontology Park Bryn Gwyn; Apr.–May 2012; D. Rojas Lanus leg.; CVMD • 1; Península Valdes; 1 Mar. 1998; D. Rojas Lanus leg.; CVMD • 1; Peninsula Valdés, Playa Colombo; 12 Dec. 2001; D. Rojas Lanus leg.; CVMD • 1; Peninsula Valdés, Punta Pardelas; 12 Dec. 2011; D. Rojas Lanus leg.; CVMD • 1; Pto. Madryn, Playa El Doradillo; 23 Oct. 2011; D. Rojas Lanus leg.; CVMD. – **Córdoba** • 1; Río Cuarto, Las Albahacas; 2 Nov. 2001; R. Gómez leg. CVMD. – **La Pampa** • 1; Curacó, Puelches,

Estância La Graciélita; 21 Oct. 2001; Bárbara Corró Molas leg.; IADIZA • 1; Curacó, Puelches, Estância La Graciélita; 26 Nov. 2002; Bárbara Corró Molas leg.; IADIZA • 1; MACN. – **La Rioja** • 1; Mascasin; Jan. 1959; CNC. – **Mendoza** • 6; 17 km E refugio Alvarado, Res. Laguna del Diamante; 35°15'22"S, 69°12'4"W; 19 Nov. 2012; G. Arriagada leg.; CVMD • 1; Desaguadero; 28–29 Feb. 2005; R. Barrera leg.; CVMD • 12; La Valle, Reserva de Telteca; 8–10 Dec. 2002; V.M. Diéguez leg.; CVMD • 1; La Valle, Reserva de Telteca; 9 Dec. 2002; R. Gómez leg. CVMD • 3; Lavalle, Telteca; 10 Dec. 2002; G. Flores leg.; IADIZA • 1; Lavalle, Telteca; 16–17 Dec. 2005; A. Marvaldi, R. Ruiz y G. Flores leg.; IADIZA • 3; Malargüe, Payunia; 35°40'47"S, 68°41'40"W; 6 Jan. 2016; F. Aballay leg.; IADIZA • 8; Malargüe, Payunia; 35°59'59"S, 68°52'55"W; 2 Dec. 2015; F. Aballay leg.; IADIZA • 2; Malargüe, Payunia, Mina Ethel; 36°0'4"S, 68°50'11"W; 4 Jan. 2016; F. Aballay leg.; IADIZA • 4; San Carlos, Laguna del Diamante; 31 Jan. 2016; F. Aballay & F. Jofré leg.; IADIZA • 36; San Carlos, Laguna del Diamante; 31 Dec. 2015; F. Aballay & F. Jofré leg.; IADIZA • 1; San Rafael, “El Sosneado”; MACN • 1; Santa Rosa, Ñacuñan; 15 Nov. 1996; G. Debandi leg.; IADIZA • 1; Santa Rosa, Ñacuñan; 16 Feb. 1982; S. Claver leg.; IADIZA • 1; Santa Rosa, Ñacuñan; 34°2'42"S, 67°54'33"W; 24 Oct. 2002; G. Debandi leg.; IADIZA • 1; Santa Rosa, Ñacuñan; Jan. 1976; S. Roig leg.; IADIZA • 1; Santa Rosa, Ñacuñan, Nov.–Dec. 1998; S. Roig leg.; IADIZA • 12; Santa Rosa, Reserva de Ñacuñan; 11–13 Dec. 2002; V.M. Diéguez leg.; IADIZA • 8; Santa Rosa, Reserva de Ñacuñan; 8–10 Dec. 2002; V.M. Diéguez leg.; IADIZA • 1; Santa Rosa, Reserva Ñacuñan; 10 Mar. 2014; G. Arriadaga leg.; CVMD • 2; Santa Rosa, Reserva Provincial Telteca; 9 Dec. 2002; R. Gómez leg.; IFML • 1; Santa Rosa, Reserva Provincial Telteca; 9 Dec. 2002; R. Gómez leg.; IADIZA • 1; MNHN • 1; Nov. 1946; Moyano leg.; IFML • 1; Dec. 1897; C. Bruch leg.; MACN. – **Neuquén** • 1; A. Breyer leg.; MACN • 1; Zapala; 12–22 Dec. 1946; Hayward y Willink leg.; IFML. – **Río Negro** • 1; Aguada Cecilio; MACN • 1; Río Colorado; 13–19 Nov. 1946; Willink leg.; IFML • 3; Río Colorado; Dec. 1990; CMNC • 3; A. Breyer leg.; MACN • 1; H. Richter leg.; MLPA • 1; Weiske leg.; MACN. – **Salta** • Anta, 33 km NE Joaquín Gonzales; 22–28 Nov. 1979; Willink leg.; IFML • 1; Cachi; MACN. – **San Luis** • 1; 30 Km NE San Luis; Dec. 2009; P. Wegner leg.; CEMT • 3; Desaguadero; 15–22 Jan. 1997; Jorge Jensen leg.; CVMD • 1; Desaguadero, 8–19 Jan. 1996; E. Escobar leg.; CVMD • 1; San Jeronimo; Jan. 1983; CMNC • 1; Santa Rosa; Feb. 1998; Jaime Pizzaro leg.; IADIZA. – **Santiago del Estero** • 3; El Pinto; Nov. 1956; CNC • 1; La Banda; Oct. 1945; Briones leg.; CMNC. – **Tucumán** • 1; C. Bruch leg.; MACN.

BOLIVIA [?] – **Without further locality** • 1; NHMUK.



**Figure 3.** Details of elytra, dorsal habitus and aedeagus of *Omorgus ciliatus* (Blanchard, 1847): **A.** Elytral tubercles present and visible (from Catamarca, Argentina); **B.** Poorly visible (Salta, Argentina) and **C.** Elytral tubercles absent (Neuquén). Habitus in dorsal view (**D–F**) of *Omorgus ciliatus* specimens and their respective aedeagus (**G–I**) showing no appreciable variation. Scale bars: 1 mm.



***Omorgus (Omorgus) indigenus* Scholtz, 1990**

Fig. 4

*Omorgus (Omorgus) indigenus* Scholtz 1990: 1411 (original description); Zidek 2013: 11 (checklist); Zidek 2017: 102 (checklist).

*Omorgus indigenus*: Morrone 2001: 63 (mention); Deloya 2005: 122 (checklist); Morrone 2014: 62 (mention, biogeography).

**Type specimens examined. Holotype, by original designation** (♂ CMNC). First label [white, typeset]: “ECU: Galap; Espanola / Bahia Manzanilla / 5–10. VI.85, S&J Peck / Prospis grove behind / beach, carrion traps”. Second label [white with black border, printed]: “[QR code] / Canadian Museum of / Musée canadien de la / NATURE / CMNCEN 00011596”. Third label [white with red border, Clarke Scholtz’s handwriting]: *Omorgus* / *indigenus* / C.H. Scholtz 1988 / HOLOTYPE”. **Type locality**: “Bahia Manzanilla, Española Is., Galapagos” [Ecuador].

**Paratypes examined:** ECUADOR – Galapagos • 15; Española Is., Bahia Manzanilla; Prosopis grove behind beach; carrion traps; 5–10 Jun. 1985; S. & J. Peck leg.; CMNC • 2; same collection data; NHMUK.

**Geographic distribution.** Endemic to Galapagos Islands [Ecuador].

**Non-type examined material (24 specimens).** ECUADOR – Galapagos • 3; Española Is., Bahia Manzanilla; 5–10 Jun. 1985; S. & J. Peck leg.; CMNC • 15; Galapagos, Española Is., Bahia Manzanilla; 25 Apr.–2

May 1985; S. Peck leg.; CMNC • 6; Galapagos, Española Is., Pta. Suarez; 2 Jun. 1992; S. Peck leg.; CMNC.

***Omorgus (Omorgus) loxus* (Vaurie, 1955)**

*Trox loxus* Vaurie, 1955: 58 (original description); Vaurie 1962: 147 (redescription); Ratcliffe 1978: 301 (new distribution records).

*Trox (Omorgus) loxus*: Scholtz 1982: 11 (catalogue).

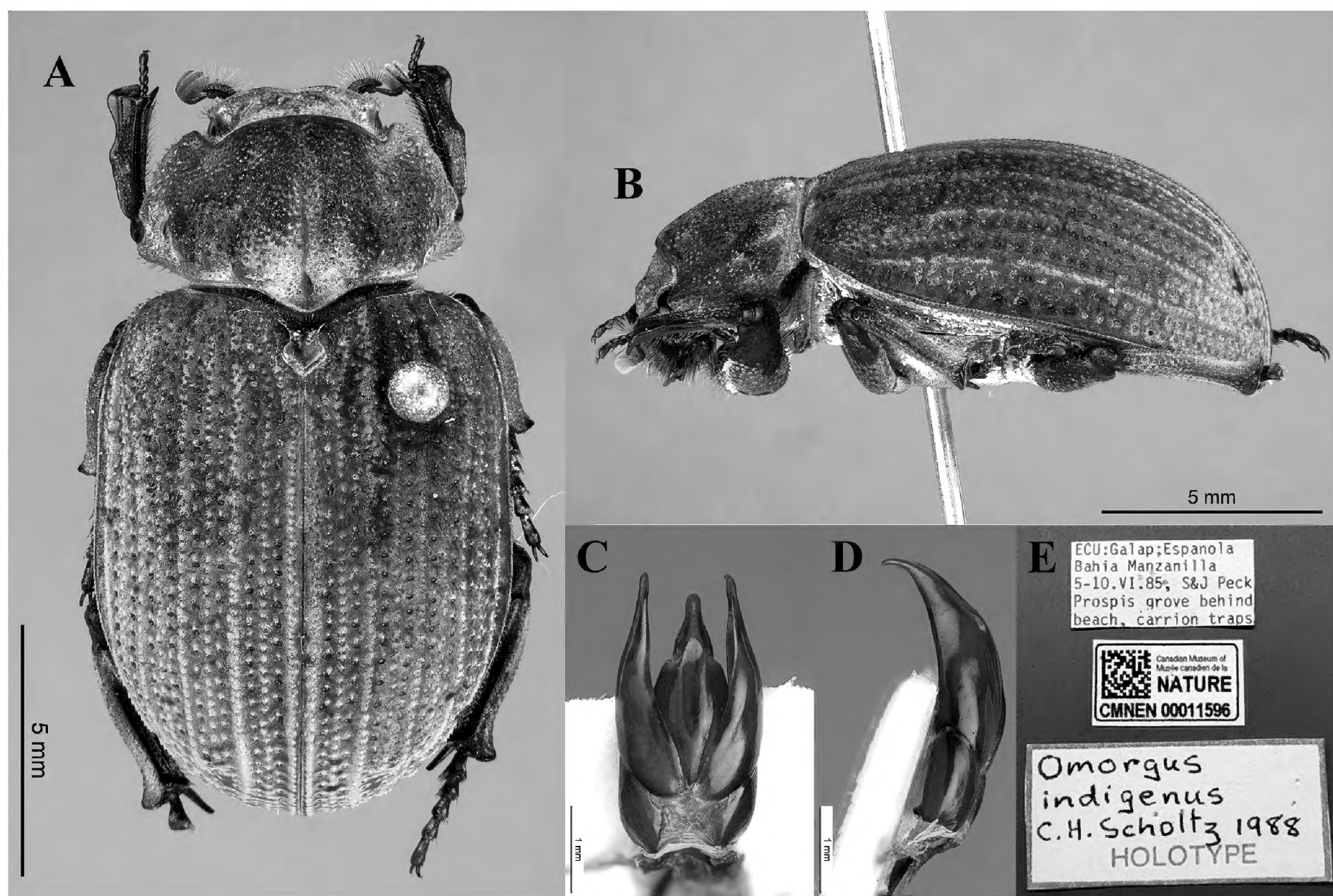
*Omorgus (Omorgus) loxus*: Scholtz 1986a: 361 (phylogenetics); Scholtz 1990: 1416 (redescription), Moragues 2010: 77 (checklist – as “*lauxus*”); Zidek 2013: 12 (checklist); Zidek 2017: 103 (checklist); Hielkema and Hielkema 2019: 11 (checklist of the Guianas); Costa-Silva et al. 2021: 1999 (review of Brazilian species).

*Omorgus loxus*: Deloya 2000: 67 (checklist); Diéguez and Gómez 2004: 94 (checklist); Deloya 2005: 122 (checklist); Gómez 2008: 515 (key for Argentinean species).

**Type specimen examined. Holotype, by original designation** (♀ MCZH). See Costa-Silva et al. (2021: 1999) for high-quality images of the type specimen. **Type locality**: “El Palmar, 16k.W. of Tetzonapa” [Mexico].

**Geographic distribution.** Argentina, Brazil, Colombia, Costa Rica, French Guiana, Mexico, Panama, and Paraguay (Vaurie 1955; Ratcliffe 1978; Scholtz 1990; Costa-Silva et al. 2021).

**Non-type examined material (three specimens additionally to Costa-Silva et al. 2021).** ARGENTINA – La Rioja • 1♀; Patquia; 1933; K.J. Hayward leg.; NHMUK



**Figure 4.** Holotype of *Omorgus indigenus* Scholtz 1990. **A.** Habitus in dorsal view; **B.** Habitus in lateral view; **C.** Aedeagus in dorsal view; **D.** Aedeagus in lateral view; **E.** Labels. Photos by François Génier (CMNC).



• 1♀; Santiago del Estero, Bords du Rio Salado, D'Icarno, Mistol paso; 1909; E.R. Wagner leg.; MNHN.

**BRAZIL** • 1; Matto Grosso (sic!); 1886; P. Germain leg.; MNHN.

### *Omorgus (Omorgus) nocheles* Scholtz, 1990

Fig. 5

*Omorgus (Omorgus) nocheles* Scholtz, 1990: 1412 (original description); Gómez 2008: 515 (key for Argentinean species); Zidek 2013: 14 (checklist); Zidek 2017: 105 (checklist); Smith 2017: 86 (notes).  
*Omorgus nocheles*: Deloya 2005: 122 (checklist).

**Type specimen examined. Holotype, by original designation** (♂ LACM). First label [white, typeset]: “El Bolson, Rio Negro, / ARGENTINA / Oct. 24–25, 1956 / Andor Kovacs”. Second label [white with red border, Clarke Scholtz’s handwriting]: “Omorgus / nocheles / 1988 / Scholtz / HOLOTYPE”. Third label [white, printed]: “[QR Code] / LACM ENT 160322” (Fig. 5E). **Type locality**: “Argentina, El Bolsón, Río Negro”.

**Geographic distribution.** *Omorgus (O.) nocheles* is known only from two specimens collected in 1956 in El Bolsón, Argentina (Scholtz 1990).

### *Omorgus (Omorgus) pastillarius* (Blanchard, 1847)

*Trox pastillarius* Blanchard, 1847: 187 (original description); Harold 1869: 1089 (catalogue); Harold 1972: 50 (redescription); Bruch

1911: 193 (checklist); Blackwelder 1944: 218 (catalogue – as “*pastillaria*”); Vaurie 1962: 149 (redescription).

*Trox (Chesas) pastillarius*: Burmeister 1876: 250, 264 (key and diagnosis); Preudhomme de Borre 1886: 59 (key and comments); Arrow 1912: 59 (catalogue).

*Trox (Omorgus) pastillarius*: Scholtz 1982: 12 (catalogue).

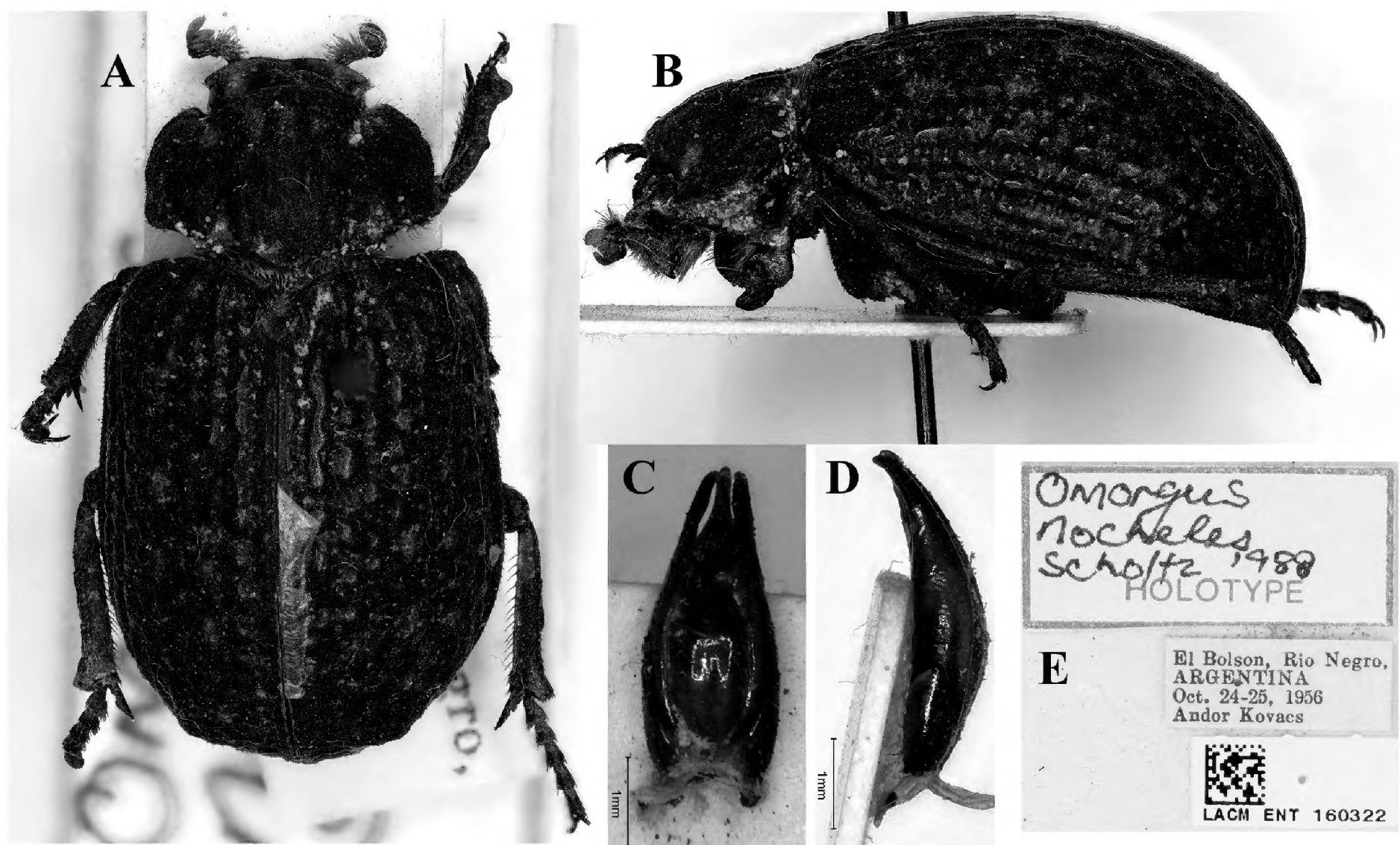
*Omorgus pastillarius*: Diéguez and Gómez 2004: 94 (checklist); Deloya 2005: 122 (checklist); Gómez 2008: 515 (key for Argentinean species).

*Omorgus (Omorgus) pastillarius*: Scholtz 1990: 1404 (redescription).

**Type specimen examined. Lectotype (MNHN).** See Smith (2017: 87) for high-quality images of the type specimen. **Type locality**: “en Patagonie, [...], en dehors de la baie de San-Blas [Buenos Aires, Argentina]”.

**Geographic distribution.** Argentina, Bolivia, and Chile (Vaurie 1962; Scholtz 1990; Smith 2017). Here we present the new country record for Paraguay (National Park Cerro Corá).

**Non-type examined material (352 specimens).** **ARGENTINA – Buenos Aires** • 3; Bahía Blanca; 6 Set.–3 Oct. 1832; C. Darwin leg.; NHMUK • 1; Estancia Baran, 30 km SO Viña del Mar; Nov. 1946; CMNC • 16–30 Set. 1968; Willink, Terán y Stange leg.; IFML. – **Catamarca** • 1; 10 km S Andalgalá; May 2004; Pio Brizuela leg.; IADIZA • 1; 6 km Santa María; 6 Dec. 1968; A. Willink y Stange leg.; IFML • 1; Belén, La Cienega; 1926; Weister Wolters leg.; MACN • 1; Belén, Loma Negra; Jan. 1927; IFML • 1; Belén; IFML • 1; Catamarca; Nov. 1983; L. Peña leg.; CMNC • 1; Los Nacimientos; 27°12'S, 66°40'W; 15 Oct. 1997; S. Roig leg.; IADIZA • 1; Punta de Balasto; 18 Jan. 1997; G. Arriagada leg.; CVMD • 1; Recreo; Dec.



**Figure 5.** Holotype of *Omorgus nocheles* Scholtz, 1990. **A.** Habitus in dorsal view; **B.** Habitus in lateral view; **C.** Aedeagus in dorsal view; **D.** Aedeagus in lateral view; **E.** Labels. Photos by Brian Brown (LACM). Length of specimen: 15.5–16.5 mm.

1920; IFML • 2; Santa María; 10–17 Dec. 1995; G. Arriágada leg.; CVMD • 1; Santa María; 27 Feb. 1992; NHMUK • 1; C. Bruch leg.; MACN • 1; 11 Dec. 1896; C. Bruch leg.; MACN • 1; MACN • 1; MLPA. – **Chubut** • Valdés, San Pablo Médano; 42°41'43"S, 64°10'44"W; 23 Aug. 2008; G. Cheli leg.; IADIZA • 2; MACN • 1; May 1905; C. Bruch leg.; MACN. – **Córdoba** • 1; 24 Oct. 1987; Gonir leg.; MACN • 1; Argüello, Dec. 1956–Jan. 1957; A. Espinal leg.; IFML • 1; Calamuchita, Belgrano; Oct. 1971; CMNC • 1; Pocho Chancaní; 19 Set.–23 Oct. 1993; L. Acosta leg.; IADIZA • 1; Rio Cuarto, Las Albahacas; 17 Nov. 2001; CVMD • 1; MACN • 3; MNHN. – **La Pampa** • 4; Chical Có, Reserva Provincial La Humada, Puesto Los Toldos; 29 Set.–24 Oct. 2002; N. Gouts leg.; IADIZA • 1; Curacó, Puelches, Estancia La Graciélita; 18 Set. 2002; Martínez leg.; IADIZA • 1; Curacó, Puelches, Estancia La Graciélita; 18 Set. 2002; Bárbara Corró Molas leg.; IADIZA • 14; Curacó, Puelches, Estancia La Graciélita; 21 Dec. 2001; Bárbara Corró Molas leg.; IADIZA • 1; Curacó, Puelches, Estancia La Graciélita; 26 Nov. 2001; Bárbara Corró Molas leg.; IADIZA • 2; Curacó, Puelches, Estancia La Graciélita; 6 Apr. 2000; Bárbara Corró Molas leg.; IADIZA • 1; La Humada, Puesto Los Toldos; 3 Oct. 2002; Maceda leg.; IADIZA • 5; Lihué Calel, Lihué Calel Parque Nacional; 17 Aug. 1996; Pessino leg.; IADIZA • 1; Lihué Calel, Lihué Calel Parque Nacional; 21 Dec. 1992; Bárbara Corró Molas leg.; IADIZA • 3; Lihué Calel, Lihué Calel Parque Nacional; 23 Mar. 1994; Pessino leg.; IADIZA • Reserva Provincial Pichi Mahuida, Salto Anderson; 22 Nov. 2003; Maceda leg.; IADIZA. – **La Rioja** • 1; Chamical, “las viscacheras”; Fev. 1989; Zunino, Barbero & Luzzatto leg.; CVMD • 1; Mascasin; Jan. 1960; M. Viana leg.; CVMD • 1; Parque Talampaya; 10 Jan. 1997; CVMD • 1; Patquia; Mar. 1948; Bremer leg.; CMNC • 1; Patquia; K.J. Hayward leg.; NHMUK • 1; Talampaya; 15–16 Jan. 1997; IADIZA. – **Mendoza** • 2; 17 km E refugio Alvarado; 36°15'22"S, 69°12'4"W; 19 Nov. 2012; G. Arriágada leg.; CVMD • 1; El Carrizal; Set. 1974; S. Roig leg.; IADIZA • 1; General Alvear, RP 188; 3 Jan. 2019; S. Roig & R. Carrara leg.; IADIZA • 2; La Cruceta; Jan. 1983; A. Crimi leg.; IADIZA • 6; La Paz, 14 km S Maquinista Levet; 2–14 Jan. 2019; S. Roig & R. Carrara leg.; IADIZA • 1; La Paz, 51 km S de La Paz; 14 Jan. 2015; S. Roig, R. Carrara leg.; IADIZA • 1; La Tosca; 17 Jun. 1976; A. Roig leg.; IADIZA • 3; Las Catitas; 10 Dec. 1951; IADIZA • 3; Lavalley, Reserva Telteca; 32°22'59"S, 68°3'14"W; 12 Apr. 2008; L. Muñoz leg.; IADIZA • 2; Lavalley, Telteca; 10 Oct.–3 Dec. 1996; R. Gonzáles leg.; IADIZA • 1; Lavalley, Telteca; 12 May–17 Jun. 1995; Flores & Roig leg.; IADIZA • 2; Lavalley, Telteca; 1–24 Nov. 1995; G. Flores, S. Roig leg.; IADIZA • 1; Lavalley, Telteca; 13 Dec. 1994–3 Feb. 1995; G. Flores leg.; IADIZA • 2; Lavalley, Telteca; 25 Set.–31 Oct. 1995; Flores & Roig leg.; IADIZA • 2; Lavalley, Telteca; 26 Mar.–2 May 1996; Flores & Roig leg.; IADIZA • 1; Lavalley, Telteca; 3 Feb.–14 Mar. 1995; G. Flores leg.; IADIZA • 2; Lavalley, Telteca; 3 Dec. 1996–6 Jan. 1997; Flores & Roig leg.; IADIZA • 1; Lavalley, Telteca; 6 Nov.–3 Dec. 1996; Flores & Roig leg.; IADIZA • 1; Ma-

largüe, 5 km E [East] Mina Ethel, Puesto Poso de Agua; 6 Jan. 2016; R. Carrara & G. Flores leg.; IADIZA • 1; Malargüe, 5 km E Mina Ethel, Puesto Poso da Agua; 6 Jan. 2016; R. Carrara & G. Flores leg.; IADIZA • 3; Malargüe, Agua Escondida; Dec. 1975; S. Roig leg.; IADIZA • 1; Malargüe, La Senillosa, Payunia; 20 Jan. 1998; A. Atencio leg.; IADIZA • 4; Malargüe, Ñacuñán; Dec. 1975; S. Roig leg.; IADIZA • 2; Reserva Ecologica Ñacuñán; Dec. 1990; Zunino, Barbero Valdinazzi leg.; CEMT • 2; Reserva Ñacuñán; Dec. 1975; Arturo Roig leg.; CVMD • 1; San Carlos, Laguna del Diamante; 31 Dec. 2015; F. Aballay & F. Jofré leg.; IADIZA • 1; San Rafael, 20 km N Ruta 146; 14 Jan. 2019; S. Roig, R. Carrara leg.; IADIZA • 1; San Rafael, 22 km W 25 de Mayo; 17 Dec. 1998; Flores & Roig leg.; IADIZA • 6; San Rafael, 30 km S Nihuil; 15 Jan. 2019; S. Roig & R. Carrara leg.; IADIZA • 1; San Rafael; MNHN • 1; San Rafael, RP 190, 32 km S Punta de Agua; 4 Jan. 2019; S. Roig & R. Carrara leg.; IADIZA • 1; San Rafael, Solar del Nihuil, 20 km S El Nihuil; 35°10'S, 68°41'W; 24 Feb. 2006; R. Carrara leg.; IADIZA • 2; Santa Rosa, Divisadero; 11 Mar. 2005; A. Scollo leg.; IADIZA • 1; Santa Rosa, El Divijadero; IADIZA • 21; Santa Rosa, Ñacuñán; 12 Dec. 1998; S. Lagos leg.; IADIZA • 2; Santa Rosa, Ñacuñán; 15 Dec. 1983; Videla Puig leg.; IADIZA • 11; Santa Rosa, Ñacuñán; 15 Dec. 1996; S. Lagos leg.; IADIZA • 5; Santa Rosa, Ñacuñán; 16 Feb. 1982; S. Claver leg.; IADIZA • 3; Santa Rosa, Ñacuñán; 16 Feb. 1996; G. Debandi leg.; IADIZA • 10; Santa Rosa, Ñacuñán; 18 Jun.–16 Jul. 1998; S. Lagos leg.; IADIZA • 2; Santa Rosa, Ñacuñán; 20 Apr. 1998; S. Roig leg.; IADIZA • 10; Santa Rosa, Ñacuñán; 20 Nov. 1992; S. Roig leg.; IADIZA • 3; Santa Rosa, Ñacuñán; 24 Apr. 1998; S. Lagos leg.; IADIZA • 1; Santa Rosa, Ñacuñán; 29 Dec. 1997–7 Feb. 1998; S. Lagos leg.; IADIZA • 1; Santa Rosa, Ñacuñán; 4 Feb. 1982; S. Claver leg.; IADIZA • 1; Santa Rosa, Reserva Ñacuñán; 1 Dec. 1981; S. Claver leg.; IADIZA • 1; Santa Rosa, Reserva Ñacuñán; 11–13 Dec. 2002; V.M. Diéguez leg.; CVMD • 1; Santa Rosa, Reserva Ñacuñán; 12 Dec. 1998; S. Lagos leg.; IADIZA • 3; Santa Rosa, Reserva Ñacuñán; 12 Dec. 1998; S. Lagos leg.; CVMD • 2; Santa Rosa, Reserva Ñacuñán; 18 Jul.–16 Aug. 1998; S. Lagos leg.; CVMD • 1; Santa Rosa, Reserva Ñacuñán; 20 Oct.–22 Nov. 1997; S. Lagos leg.; CVMD • 3; Santa Rosa, Reserva Ñacuñán; 24 Set. 1995; C. Campos leg.; IADIZA • 1; Santa Rosa, Reserva Ñacuñán; 26 Mar. 1984; Ruig Videla leg.; IADIZA • 1; Santa Rosa, Reserva Ñacuñán; 27 Jan. 1994; M. Lacomí leg.; IADIZA • 9; Santa Rosa, Reserva Ñacuñán; 3 Dec. 1981; S. Claver leg.; IADIZA • 5; Santa Rosa, Reserva Ñacuñán; 7 Feb. 1998; S. Lagos leg.; IADIZA • 1; Santa Rosa, Reserva Ñacuñán; 9 Nov. 1996; IADIZA • 2; Santa Rosa, Reserva Ñacuñán; Fev. 1974; A. Roig leg.; IADIZA • 1; Santa Rosa, Reserva Ñacuñán; Mar. 1976; F. Roig leg.; IADIZA • 1; Santa Rosa, Reserva Ñacuñán; Apr. 1976; S. Roig leg.; IADIZA • 1; Telteca; 15 Dec. 1994–3 Feb. 1995; Flores & Roig leg.; CVMD • 1; C. Bruch leg.; MACN • 1; MNHN • 13; MLPA • 1; MACN. – **Misiones** • 2; 1932; K.J. Hayward leg. NHMUK. – **Neuquén** • 2; Añelo; 24 Nov. 1976; O. de Ferraris leg.;



IADIZA • 1; Confluencia, Estación Challacó; C. Bruch leg.; MACN • 2; Plaza Huincul; 29 Oct. 1970; M. Gentili leg. IADIZA • 1; Ramon M. Castro; 25 Set. 1971; M. Gentili leg.; IADIZA • 1; Santa Rosa, Sierra Auca Mahuida; 22 Mar. 2002; Bernardo Parisek leg.; CVMD • 1; Villa La Angostura, Cerro Bayo; 15 Oct. 1982; M. Gentili leg.; IADIZA • 1; C. Bruch leg.; MACN • 5; 1907; Dr. Adolf Lendl leg.; MNHN • 2; Zapala, Cerro Mesa, 20 km E Zapala (Ruta 16); 8 Dec. 2017; E. Stevani, G. Flores, R. Carrara, F. Aballay leg.; IADIZA. – **Río Negro** • 1; Pringles; Mar. 1895; Koehler leg.; MLPA • 1; Río Colorado; 13–19 Nov. 1946; Willink leg.; IFML • 1; Villa Regina; Oct. 1961; DZUP • 4; Village de Patagones [= Viedma], “salinas d’Andrés Paz”; Mar.–Apr. 1829; A. d’Orbigny leg.; MNHN. – **La Rioja** • Castro Barros; 18 Feb. 1939; Biraben-Scott leg.; MLPA • 1; MLPA. – **Salta** • 1; Cafayate (Yacochuya); 6 Apr. 1988; Stange y Willink leg.; IFML • 1; Cafayate, Tolombóm; 9 Nov. 1995; G. Flores leg.; IADIZA • 1; Merán; Mar. 1929; IFML • 1; Piedra del Molino; Dec. 1990; CMNC • 1; Ruiz de los Llanos; Fev. 1947; R. Golbach leg.; IFML. – **San Luis** • 1; 18 km S Arionza; 18–26 Jan. 1982; H & A Howden leg.; CMNC • 3; Belgrano, Fundo El Molle; 15–20 Jan. 2007; José Gómez leg.; CVMD • 2; Belgrano, Fundo El Molle; 20–28 Jan. 2013; G. Arriágada leg.; CEMT • 2; Belgrano, Fundo El Molle; 33°2'22"S, 66°30'47"W; 10–15 Jan. 2009; José Gómez leg.; CVMD • 3; Belgrano, San Isidro; Jan. 2007; E. Abadie leg.; CEMT • 4; Desaguadero; 15 Jan. 1998; Daniel Velasquez leg.; CVMD • 1; Desaguadero; 4–7 Jan. 2008; V.M. Diéguez leg.; CVMD • 4; Jarilla; Dec. 1974; S. Roig leg.; IADIZA • 1; San Jeronimo; Nov. 1974; S. Roig leg.; IADIZA • 6; Suyuque; MLPA. – **Santiago del Estero** • 3; Choya; Apr. 1968; M. Viana leg.; CVMD • 1; Estación Puni-Tajo; 11 Dec. 1939; Biraben - Bezzi leg.; MLPA • 5; Icano, Río Salado; 1910; E.R. Wagner leg.; MNHN • 1; La Banda; Oct. 1945; Briones-Prosen leg.; CMNC • 1; Lago Muyo; 29 Mar.–12 Apr. 1957; R. Golbach leg.; IFML • 1; Mal Paso; Oct. 1946; Ruiz Huidobro leg.; IFML • 2; Monte Quemado; MACN • 1; Río Salado; Wagner leg.; MLPA • 2; MNHN • 2; Jan. 1952; IADIZA. – **Tucumán** • 1; Cruz Alta, La Soledad, Cañete; 27 Jan. 1966; Bucher leg.; IFML • 1; MNHN.

**BOLIVIA** • 3; NHMUK.

**CHILE** • 8; NHMUK.

**PARAGUAY** – **Amambay** • 1; P.N. [National Park] Cerro Corá; 30 Mar. 2003; R. Garcés leg.; CVMD.

### *Omorgus (Omorgus) persuberosus* (Vaurie, 1962)

*Trox persuberosus* Vaurie, 1962: 145 (original description).

*Trox (Omorgus) persuberosus*: Scholtz 1982: 12 (catalogue).

*Omorgus persuberosus*: Deloya 2005: 122 (checklist); Ratcliffe 2015: 189 (checklist from Peru); Casari et al. 2024: 629 (image).

*Omorgus (Omorgus) persuberosus*: Scholtz 1986a: 361 (phylogenetics); Scholtz 1990: 1411 (redescription); Zidek 2013: 15 (catalogue); Zidek 2017: 106 (catalogue); Smith 2017: 87 (distribution data); Costa-Silva et al. 2021: 2005 (review of Brazilian species).

**Type specimens examined. Holotype, by original designation** (♂ MZSP). See Costa-Silva et al. (2021: 2003) for high-quality images of the type specimen. **Type locality**: “Ypiranga, São Paulo” [Brazil].

**Paratypes**. Forty specimens from several localities in different institutions (see Vaurie 1962: 146).

**Geographic distribution**. Argentina, Bolivia, Brazil, Paraguay, Peru, and Uruguay (Vaurie 1962; Scholtz 1990; Costa-Silva et al. 2021).

### *Omorgus (Omorgus) spatulatus* (Vaurie, 1962)

Fig. 6

*Trox spatulatus* Vaurie, 1962: 151 (original description).

*Trox (Omorgus) spatulatus*: Scholtz 1982: 13 (catalogue).

*Omorgus spatulatus*: Deloya 2005: 122 (checklist).

*Omorgus (Omorgus) spatulatus*: Scholtz 1990: 1404 (redescription); Zidek 2013: 16 (checklist); Zidek 2017: 108 (checklist).

**Type specimen examined. Holotype, by original designation** (♂ NHMB). First label [white aged, typeset]: “Provincia / Buenos Aires”. Second label [white aged, unknown handwriting]: “II [?]”. Third label [white, typeset]: “Museum Frey / Tutzing”. Fourth label [red, Patricia Vaurie’s handwriting]: “TYPE / Trox / spatulatus / Vaurie” (Fig. 6D). **Type locality**: “Provincia Buenos Aires” [Argentina].

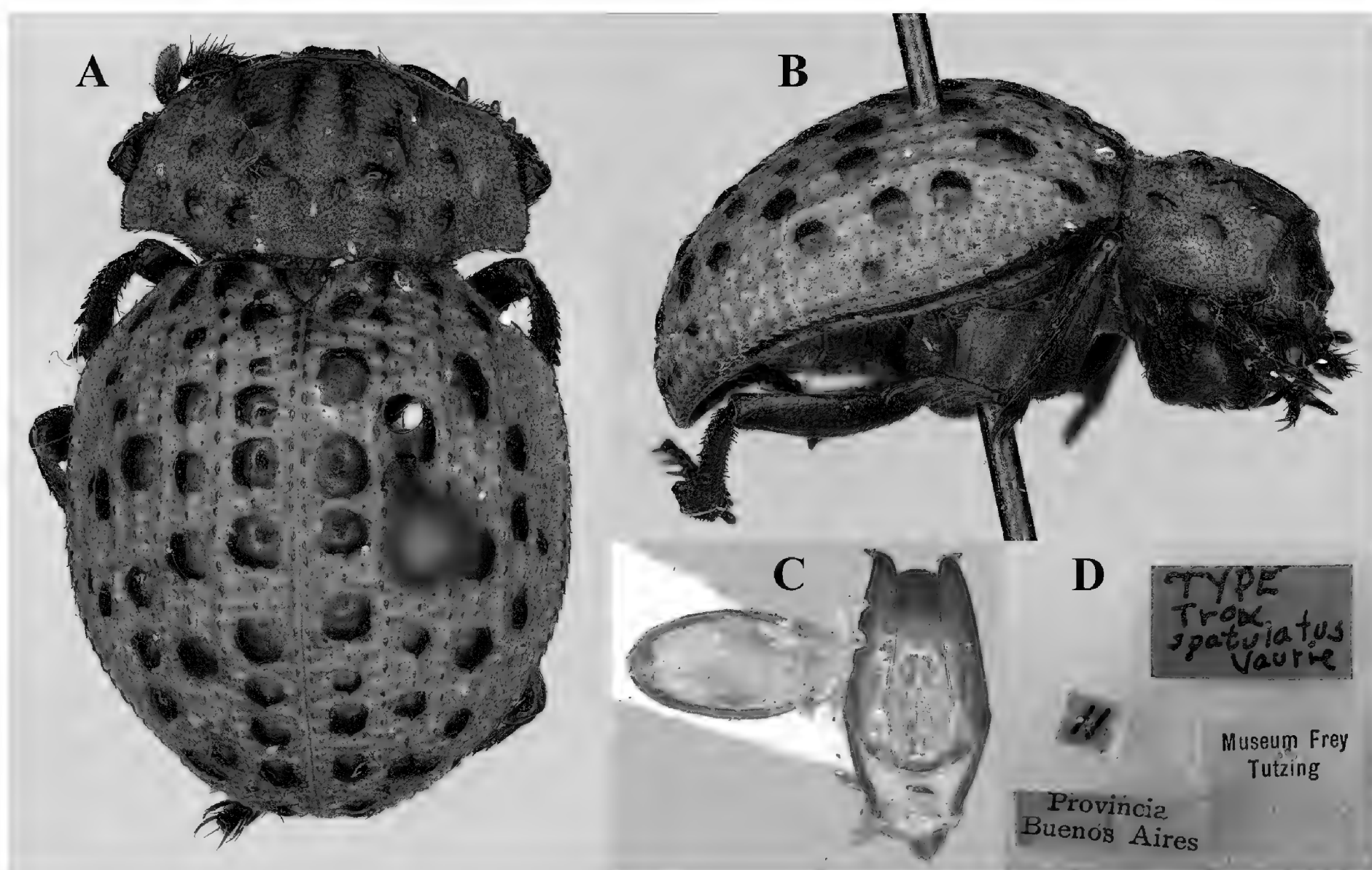
**Geographic distribution**. Argentina (Vaurie 1962; Scholtz 1990).

**Non-type examined material (215 specimens). ARGENTINA** – **Buenos Aires** • 1; La Plata; MLPA • 12; Quéquen Puerto; 7 Mar. 1928; M.D. Jurado leg.; MACN • 1; Quéquen Puerto; G. Pellerano leg.; MACN • 1; Quéquen; Fev. 1937; CEMT • 1; Quéquen; Fev. 1937; DZUP • 12; A. Breyer leg.; MACN • 2; C. Bruch leg. MACN • 175; MACN. – **Córdoba** • 10; Miramar; MLPA.

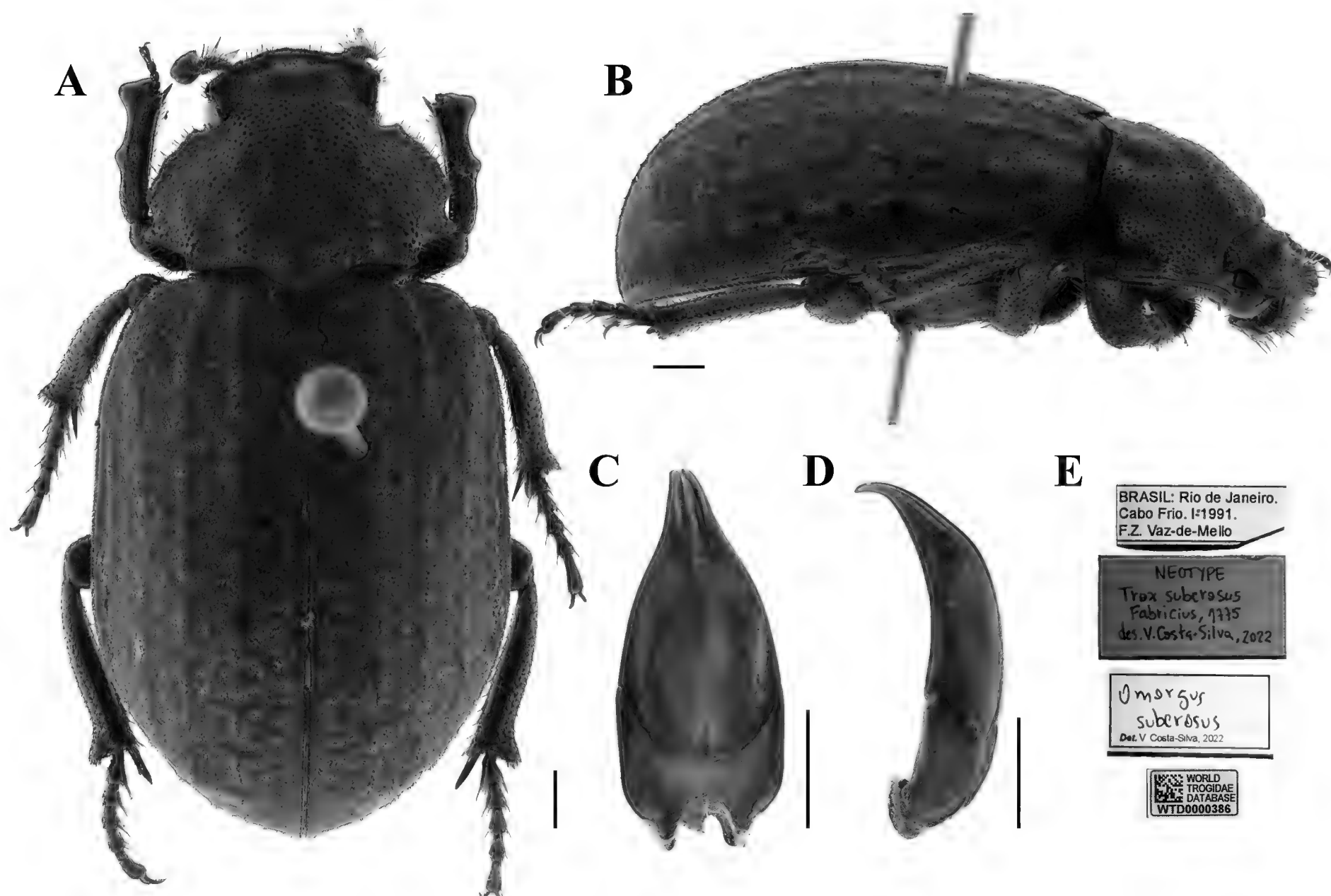
### *Omorgus (Omorgus) suberosus* (Fabricius, 1775)

Fig. 7

*Trox suberosus* Fabricius, 1775: 31 (original description); Fabricius 1781: 34 (diagnosis); Fabricius 1787: 18 (diagnosis); Olivier 1789: 6 (diagnosis); Gmelin 1790: 1586 (diagnosis); Herbst 1790: 29 (description); Fabricius 1792: 87 (diagnosis); Fabricius 1801: 111 (diagnosis); Illiger 1802: 332 (catalogue); Schönherr 1806: 118 (catalogue); Castelnau 1840: 107 (as ‘*tuberosus*’ – misspelling); Sturm 1843: 112 (checklist); Blanchard 1847: 190 (catalogue); Lacordaire 1856: 151 (type designation of *Omorgus*) Harold 1869: 1090 (checklist); Harold 1872: 119 (redescription); Horn 1874: 5 (diagnosis, comments); Burmeister 1876: 257 (diagnosis); Berg 1881: 99 (checklist); Arrow 1903: 516 (notes about fauna of the St. Vincent Island); Bruch 1911: 194 (checklist); Leng 1920: 253 (catalogue); Mutchler 1925: 238 (catalogue of Galapagos Islands); Blatchley 1928: 64 (records for Florida); Leng 1928: 422 (catalogue of New York); Sim 1934: 11 (larvae description); Denier 1936: 205 (natural history); Hayward 1936: 217 (feeding habit); Blackwelder 1944: 219 (catalogue – as ‘*suberosa*’); Van Dyke 1953:



**Figure 6.** Holotype of *Trox spatulatus* Vaurie, 1962 (now *Omorgus spatulatus*). **A.** Habitus in dorsal view; **B.** Habitus in lateral view; **C.** Spiculum gastrale and aedeagus in dorsal view; **D.** Labels. Photos by Christoph Germann (NHMB). Length of specimen: 10 mm.



**Figure 7.** *Trox suberosus* Fabricius, 1775 (now *Omorgus suberosus*), Neotype, here designated (♂ NHMUK): **A.** Habitus in dorsal view; **B.** Habitus in lateral view; **C.** Aedeagus in dorsal view; **D.** Aedeagus in lateral view; **E.** Labels. Scale bars: 1 mm.



123 (distribution data); Haaf 1954: 739 (catalogue of Australia); Vaurie 1955: 60 (redescription); Howden and Vaurie 1957: 4 (pronotum and aedeagus drawing); Ritcher 1958: 325 (biology); Vaurie 1962: 144 (redescription); Landin 1963: 4 (record from Cape Verde Is.); Zimsen 1964: 38 (catalogue); Ritcher 1966: 73 (biology); Hatch 1971: 464 (key to the Pacific Northwest beetles); Chalumeau and Gruner 1974: 787 (catalogue of French Antilles); Paulian 1981: 4 (larvae morphology); Young and Hamm 1985: 93 (feeding experiment); Young 2006: 271 (biology); Bouchard et al. 2024: 372 (mentioned as type species).

*Trox (Omorgus) suberosus*: Burmeister 1876: 257 (redescription); Arrow 1912: 62 (catalogue); Scholtz 1982: 13 (systematics).

*Omorgus suberosus*: Erichson 1847: 111 (new combination); Baker 1968: 42 (larvae's description); Chalumeau 1977: 231 (corrigenda); Scholtz 1986a: 361 (phylogenetics); Scholtz 1986b: 54 (distribution from Australia); Scholtz 1990: 1407 (redescription); Ratcliffe 1991: 157 (redescription); Baraud 1992: 24 (diagnosis); Browne et al. 1993: 199 (phylogeny); Muñoz-Batet and Lopez-Colon 1995: 279 (record from Czech Republic); Páramo 1997: 29–31 (distribution); Costa et al. 1988: 109 (larvae description and illustration); Deloya 2000: 69 (checklist); Ratcliffe 2002: 8 (checklist from Panama); Rosano-Hernandes and Deloya 2002: 32: (natural history); Morón 2003: 408 (checklist); Deloya 2003: 132 (diagnosis and distribution); Diéguez and Gómez 2004: 94 (checklist); Deloya 2005: 122 (checklist); Nikolajev 2005: 322 (larvae characteristics); Löbl and Smetana 2006: 79 (catalogue); Lopes et al. 2007: Mora-Aguilar and Montes de Oca 2009: 575 (distribution); Philips 2009: 4 (association with mites); Krell 2010: 4 (checklist); Carvajal et al. 2011: 161 (checklist); Zidek 2013: 17 (checklist); Verdugo 2014: 212 (mention); Ratcliffe 2015: 189 (checklist from Peru); Ziani et al. 2015: 3 (distribution); Baena et al. 2015: 2, 4 (feeding behaviour); Pittino and Bezděk 2016: 54 (checklist); Strümpher et al. 2016: 57 (phylogeny); Zidek 2017: 109 (checklist); Smith 2017: 87 (notes, distribution); Cortez et al. 2017: 4 (natural history); Huchet and Costa-Silva 2018: 565 (new distribution records from South America); Hielkema and Hielkema 2019 (checklist of the Guianas); Miquel 2019: 184, 186 (distribution); Giraldo-Mendoza 2021: 64 (checklist from Peru); Costa-Silva et al. 2021: 2008 (review of Brazilian species).

*Omorgus (Omorgus) suberosus*: Gianizella and Prado 1999: 749–751 (in poultry houses); Lopes et al. 2007: 29–31 (in poultry houses); Strümpher and Kalawate 2023: 518 (catalogue of the Oriental and Palearctic species); Pablo-Cea et al. 2023: 16 (catalogue of El Salvador).

**Synonyms.** For a comprehensive list, see Pittino and Bezděk (2016: 54–55) and Smith (2017: 88).

**Type specimen examined. Neotype, here designated** (♂ NHMUK – Fig. 7). First label [white, printed]: “BRASIL: Rio de Janeiro, / Cabo Frio, I-1991, / F.Z. Vaz-de-Mello”. Second label [red, Vinicius Costa-Silva's handwriting]: “NEOTYPE / *Trox suberosus* / Fabricius, 1775 / des. V. Costa-Silva, 2022”. Third label [white with black border, Vinicius Costa-Silva's handwriting]: “*Omorgus* / *suberosus* / Det. V. Costa-Silva, 2022”. Fourth label [white, printed]: “[QR Code] / WORLD / TROGIDAE / DATABASE / WTD0000386” (Fig. 7E). **Type locality:** “Brasil, Rio de Janeiro, Cabo Frio”.

**Geographic distribution.** Widespread (see below). For details of distribution, see Huchet and Costa-Silva (2018) and Costa-Silva et al. (2021).

**Neotype designation of *Trox suberosus* Fabricius, 1775.** *Trox suberosus* was originally described in 1775 by the Danish entomologist Johan Christian Fabricius (1745–1808) based on an unspecified number of specimens collected from “Brasilia” (Latin spelling meaning Brazil) that he had examined in the collection of Sir Joseph Banks (“*Mus. Dom. Banks*”). The collection is housed currently in The Natural History Museum, London, UK (Fabricius 1775; Zimsen 1964). Seventy years later, Erichson (1847) described the genus *Omorgus*, transferring *Trox suberosus* to the new genus. Even after the proposal of Erichson (1847) and the subsequent designation of *Omorgus suberosus* as type species of the genus *Omorgus* by Lacordaire (1856), the species was historically cited as in its original combination by several authors (i.e., Harold 1869; Harold 1872; Burmeister 1876; Arrow 1903; Bruch 1911; Arrow 1912; Leng 1920; Mutchler 1925; Leng 1928; Denier 1936; Hayward 1936; Blackwelder 1944; Van Dyke 1953; Haaf 1954; Vaurie 1955; Ritcher 1958; Vaurie 1962; Zimsen 1964; Ritcher 1966; Hatch 1971; Chalumeau and Gruner 1974; Scholtz 1982). The species remained in the original combination until the systematic study carried out by Scholtz (1986a), where the author proposed *Omorgus* as a genus based on several synapomorphies (see Scholtz 1986a for more details). Scholtz's proposal (1986a), which was adopted by recent authors, was supported by the molecular phylogeny conducted by Strümpher et al. (2014).

*Omorgus suberosus* is native to the New World and is widely distributed throughout South, Central and North America (from Canada to southern Argentina) (Vaurie 1962; Scholtz 1990; Huchet and Costa-Silva 2018; Costa-Silva et al. 2021). In South America *Omorgus suberosus* is present in all countries except Chile (see Diéguez 2008). It has also been recorded from the Galapagos Archipelago (Ecuador) (Vaurie 1962; Scholtz 1990).

The ubiquitous New World species has also been recorded from other parts of the world (outside of the New World) such as: Australia, Europe (from Belgium, Czech Republic, Spain), North Africa (from Morocco), Southeast Asia (from the Philippines), and on oceanic islands in the Pacific (Fiji, New Caledonia) and Atlantic (Cape Verde, Canary Islands) (Vaurie 1955, 1962; Scholtz 1986b; Scholtz 1990; Batet and López-Colón 1995; Páramo 1997; Ziani et al. 2015; Pittino and Bezděk 2016; Huchet and Costa-Silva 2018; Costa-Silva et al. 2021). The human hand may have contributed to the dispersal of *Omorgus suberosus* to almost all continents through human migrations, and international transport of products mainly via shipping. Harold (1872) mentioned specimens of *Trox suberosus* found in a wool shipment imported from Argentina in a factory in Verviers (Belgium). With the fast and silent widespread introductions, plus the high degree of intraspecific variability (i.e., colour, size, the shape of elytral tubercles; see Harold 1872) of *T. suberosus* (originally described from Brazil), a lot of new species names were described for several countries/continents when in fact, they are just morphotypes of the introduced *T. suberosus*. For the list of synonyms, see Smith (2017) and Zidek (2017).

*Omorgus suberosus* is also known to be highly opportunistic, and in the absence of carcasses will exploit virtually any other source of keratin (or chitin) present in their environment. This species has been recorded feeding on eggs, dung and chicken feathers in poultry farms in Brazil (Gianizella and Prado 1999; Lopes et al. 2007), locust eggs in Argentina (Baker 1986), as a “potential predator” of the eggs of the turtles in Mexico, Costa Rica and the Galapagos Islands (Rosano-Hernández and Deloya 2002; Baena et al. 2015), and iguana eggs also in Galapagos (Allgower 1979; Rosano-Hernández and Deloya 2002), being considered a risk factor for the survival of these (and other) species considered as vulnerable according to the International Union for the Conservation of Nature (IUCN) (see Baena et al. 2015).

On the compilation of Fabricius types, Zimsen (1964) presented a list mentioning two type specimens

of *Trox suberosus*: one from Joseph Banks’ collection (housed in the British Museum of Natural History - NHMUK) and another from the Zoologisches Museum, Kiel University (ZMUK). Both specimens were meticulously studied by us; however, as first noted by Vaurie (1962), the type specimen of *Trox suberosus* lodged in Banks’ collection (NHMUK) corresponds to *Trox monachus* (now *Omorgus monachus* – Fig. 8) described by Johann Friedrich Wilhelm Herbst in 1790, 15 years after *Trox suberosus* description. In the description, Fabricius (1775) mentioned “elytris striatis” and later “Elytra minus rugosa [...]”, but none of these statements correspond to the specimen standing as “type” of *Trox suberosus* in Banks’ collection. This statement/description of “elytris striatis” was repeated in all of Fabricius’ subsequent publications that mentioned *T. suberosus* (Fabricius 1781, 1787, 1792 and 1801; Fig. 9). According to Harold (1872), *Trox monachus* presents “tuberculata elytrorum omnia, etiam suturalia, rotundam omnino tomentosa” and Vaurie (1962) presents records of this species only from the USA (Florida, Nebraska, Kansas, Oklahoma and Texas); the type of *Trox suberosus* is from Brazil, probably Rio de Janeiro (see Papavero 1971). The other specimen mentioned by Zimsen (1964), from ZMUK (Fig. 10), was studied through detailed photographs kindly provided to us by Dr. Michael Kuhlmann (ZMUK). With these high-resolution images from various angles, it was possible to confirm, without any doubt, that the specimen from ZMUK mentioned as a



**Figure 8.** Supposed syntype of *Trox suberosus* Fabricius, 1775 (= *Trox monachus* Herbst, 1790) from Joseph Banks collection (NHMUK): **A.** Habitus in dorsal view; **B.** Patricia Vaurie’s handwritten note about the type specimen; **C.** Type labels. Scale bar: 1 mm. Photo by Keita Matsumoto (NHMUK).

- A** 2. *T. griseus* thorace marginato margine postice dentato, *suberosus*, elytris striatis. Habitat in Brasilia. Muf. Dom. Banks. Statura praecedentis, at major. Thorax carinatus marginatus postice dente unico armatus. Elytra minus rugosa, quam in praecedente.
- B** *suberosus*. 2. *T. griseus*, thorace marginato, margine postice dentato, elytris striatis. Syst. Ent. 31. 2. \* Habitat in Brasilia. Muf. Dom. Banks.
- C** *suberosus*. 3. *T. griseus* thorace marginato, margine postice dentato, elytris striatis.
- D** 4. *T. griseus* thorace marginato: margine postice *suberosus* dentato, elytris striatis. *Trox suberosus* Oliv. Inf. 1. 4. 6. 3. tab. 1. fig. 6. *Trox granulatus* Herbst Arch. tab. 19. fig. 20. Habitat in Brasilia Muf. Dom. Banks. Thorax carinatus, marginatus postice dente unico armatus. Elytra minus rugosa quam in *T. fabuloso*.
- E** 6. *T. thorace marginato*: margine postice dentato, *suberosus* elytris striatis. Ent. syst. 1. 87. 4. Oliv. Inf. 1. 4. 6. 3. tab. 1. fig. 6. Herbst. Arch. tab. 19. fig. 20. - - Col. 3. tab. 21. fig. 3. Habitat in Brasilia. Muf. Dom. Banks. Thorax carinatus, marginatus, postice dente unico armatus.

**Figure 9.** *Trox suberosus*’ descriptions provided by Johan Christian Fabricius in his publications of **A.** 1775; **B.** 1781; **C.** 1787; **D.** 1792; and **E.** 1801.

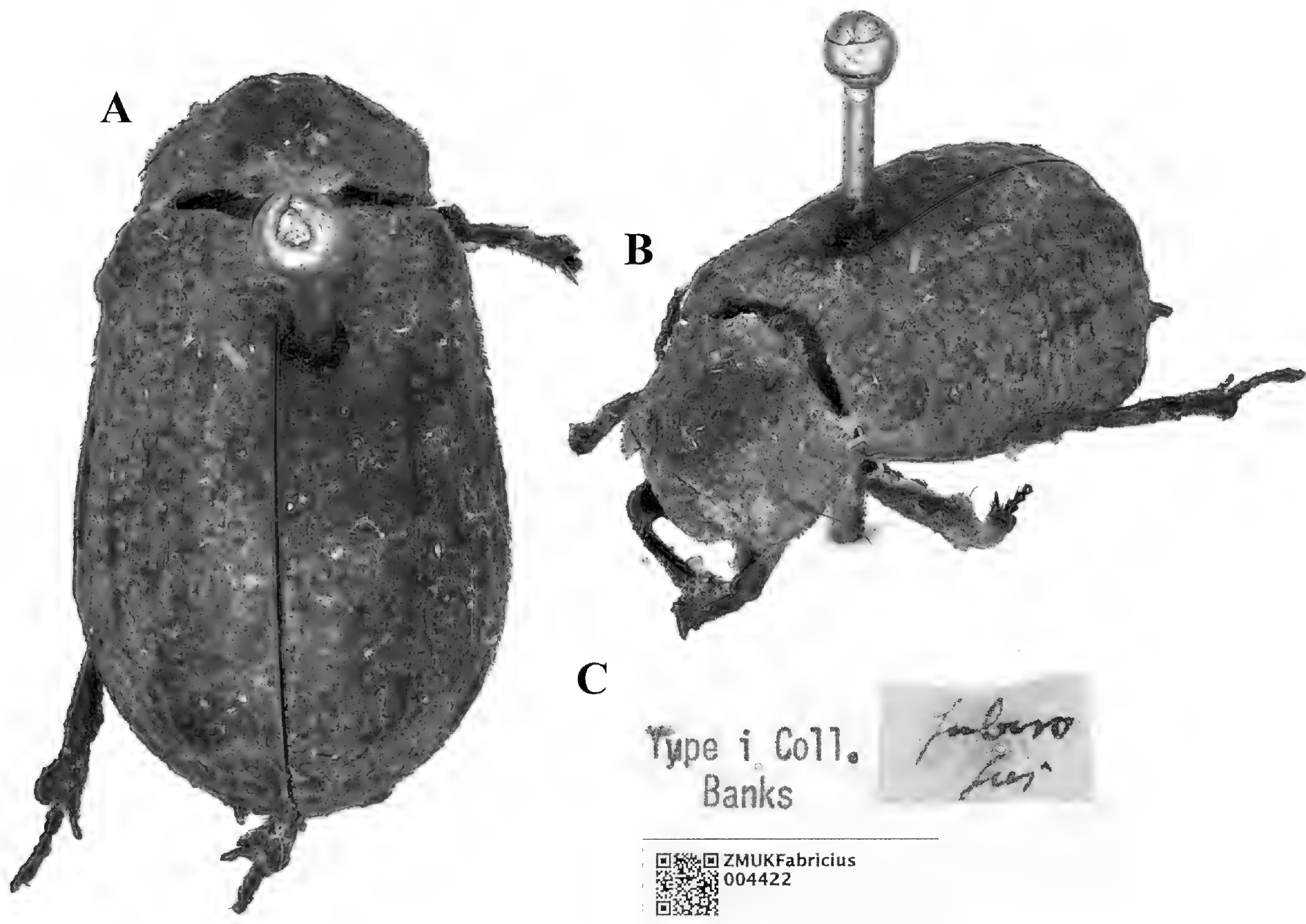


*Trox suberosus*' syntype by Zimsen (1964) is a specimen that belongs to the modern concept of the genus *Trox*, and not *Omorgus*. The identification to species level was not conclusive. However, considering that the species described by Fabricius comes from the Banks Collection, there is no reason (or evidence) to consider the specimen housed in ZMUK as part of the type series. The label with Fabricius' handwriting saying "*suberosus*" on the specimen from ZMUK was probably put on later and corresponds to either a misidentification of the species or an inadvertent misspelling (between "*sabulosus*" and "*suberosus*") of a specimen from his own collection.

Since Vaurie (1962), the name-bearing type specimen of *Trox suberosus* (mainly that from NHMUK) has been cited as "problematic" (i.e., Vaurie 1962; Hielkema and Hielkema 2019; Costa-Silva et al. 2021), because the specimen does not correspond to the original description. In the case here presented, we believe that all specimens widely recognized and identified as *Trox suberosus* were based on "*common sense*" and on a universally recognized concept, but not based on a proper name-bearing type. As presented here and well-documented in the literature (see Vaurie 1955), both *Omorgus suberosus* and *O. monachus* are morphologically well-defined, and universally recognized as different species, and should be treated as such. Due to its non-compliance with the description and the stated type locality, we here propose that the specimen

housed in the Banks collection under the name *suberosus* Fabricius is a specimen of the North American *Trox monachus* which has been mistakenly substituted with the original material of *Trox suberosus* from Brazil, and that the original type material of *Trox suberosus* has been lost. Such a substitution is particularly credible in the Joseph Banks collection, since the specimens do not have locality labels or determination labels, and the handwritten name labels, and labels indicating 'type', are pinned onto the drawers and not attached to the specimens. Hence a misplaced specimen would not be easy to recognize as such except by comparison with the original description.

In order to establish the single name-bearing type specimen of the widespread *Trox suberosus*, we propose the designation of a neotype. Our proposed neotype specimen (Fig. 7) morphologically match with the original description provided by Fabricius (1775; Fig. 9A) and fulfils the qualifying conditions of ICZN Article 75.3 (ICZN 1999). To avoid possible future confusion and to maintain the type locality as consistent as possible, and to comply with ICZN Article 75.3.6, we here select as the neotype a specimen from a similar locality as the presumed lost specimen collected by Joseph Banks during his voyage across the globe on the Endeavour (1768–1771) (Zimsen 1964; Papavero 1971). According to Papavero (1971), "Brasilia, Dom. Banks of Fabricius" refers to the collection made by Sir. Joseph Banks in Ilha Rasa, off the coast near the



**Figure 10.** Alleged syntype of *Trox suberosus* Fabricius, 1775 (= *Trox* sp.) from Fabricius collection (ZMUK): **A.** Habitus in dorsal view; **B.** Habitus in fronto-lateral view; **C.** Type labels. Photo by Michael Kuhlmann (ZMUK).

Guanabara Bay (Rio de Janeiro) on December 7<sup>th</sup>, 1768 (for details, see Banks 1896; also see Cupello et al. 2023 for additional information about Joseph Bank collection). For detailed diagnoses and redescrptions of *Omorgus suberosus*, see Harold (1872), Vaurie (1962) and Scholtz (1990); and for additional high-quality images see also Huchet and Costa-Silva (2018) and Costa-Silva et al. (2021).

### ***Omorgus (Omorgus) triestinae* Pittino, 1987**

*Omorgus triestinae* Pittino, 1987: 378; Scholtz 1990: 1407 (as new synonym of *Omorgus suberosus*); Zidek 2013: 17 (catalogue – as synonym of *Omorgus suberosus*); Smith 2017: 88 (as synonym of *Omorgus suberosus*); Zidek 2017: 109 (catalogue – as synonym of *Omorgus suberosus*); Huchet and Costa-Silva 2018: 559 (reinstated as a valid name); Costa-Silva et al. 2021: 2016 (review of Brazilian species).

**Type specimens examined. Holotype, by original designation** (♂ MNHN). See Costa-Silva et al. (2021: 2015) for high quality images of the type specimen. **Type locality**: “Brésil, Minas-Geraes” [Brazil].

**Paratypes.** Same data label of the holotype (11 MNHN).

**Geographic distribution.** Bolivia, Brazil, and Paraguay (Huchet and Costa-Silva 2018; Costa-Silva et al. 2021).

### ***Omorgus (Omorgus) capillaceus* Scholtz, 1990 a new junior synonym of *Omorgus (Omorgus) fuliginosus* (Robinson, 1941).**

### ***Omorgus (Omorgus) fuliginosus* (Robinson, 1941)**

Fig. 11

*Trox (Omorgus) fuliginosus* Robison, 1941: 134 (original description); Blackwelder and Blackwelder 1948: 31 (checklist).

*Trox fuliginosus*: Vaurie 1955: 66 (redescription); Vaurie 1958: 45 (distribution); Blackwelder 1973: 35 (checklist); Ratcliffe 1978: 301 (distribution).

*Omorgus fuliginosus*: Baker 1968: 43 (larvae description); Deloya 1992: 3 (natural history); Deloya 1996: 43 (natural history); Morón et al. 1998: 91 (distribution); Deloya 2000: 66, 73 (checklist); Smith 2003: 6 (checklist); Deloya 2003: 130 (diagnosis and distribution); Deloya 2005: 122, 124, 128 (key); Mora-Aguilar and Montes de Oca 2009: 575 (distribution).

*Omorgus (Omorgus) fuliginosus*: Zidek 2013: 10 (checklist); Zidek 2017: 101 (checklist); Pablo-Cea et al. 2023: 16 (catalogue of El Salvador).

*Omorgus (Omorgus) capillaceus* Scholtz, 1990: 1413 (new synonym); Deloya 2005: 122 (checklist); Zidek 2013: 8 (checklist); Zidek 2017: 99 (checklist).

**Type specimen examined. Holotype, by original designation** (♂ USNM – Fig. 11). First label [white aged, typeset]: “New Braunfels / IV.10 ’02 Tex”. Second label [white aged, typeset]: “H. Mittendorf / Collector”. Third label [red, printed]: “Type No / 55468 / USNM”. Fourth label [red, Mark Robinson’s handwriting]: “HOLOTYPE / Trox / fuliginosus / Mark Robinson”. Sixth label [white, print-

ed]: “USNMENT / [QR Code] / 01474112” (Fig. 11C).

**Type locality**: “New Braunfels” [Texas, United States].

**Type specimen of *Omorgus (Omorgus) capillaceus* Scholtz, 1990 (new synonym) examined. Holotype, by original designation** (♀ CMNCH – Fig. 12). First label [white aged, unknown’s handwriting]: “Botoga / Colombia / S. Amer.”. Second label [white, typeset]: “Carn. Mus. / Acc. 2275”. Third label [white, printed]: “[QR code] / CMNCH-IZ / 724,596”. Fourth label [white with red border, Clark Scholtz’s handwriting]: “Omorgus / capillaceus / C.H. Scholtz 1988 / HOLOTYPE” (Fig. 12C).

**Type locality**: “Bogota, Colombia”.

**Remarks.** *Omorgus (Omorgus) capillaceus* was one of the species described by Scholtz in 1990 during his monographic revision of the Trogidae of South America. This species was identified in the collection of the Carnegie Museum of Natural History (CMNCH) and described based on a single female specimen, distinguished by its morphological differences from other South American species. Scholtz noted that *O. capillaceus* was similar to *O. monachus* (Herbst, 1790) and *O. fuliginosus* (Robinson, 1941), both of which are North American species. However, he highlighted a diagnostic feature that distinguishes *O. capillaceus* from other similar-looking species: the absence of a velutinous covering on the elytral disc, which is present in its relatives.

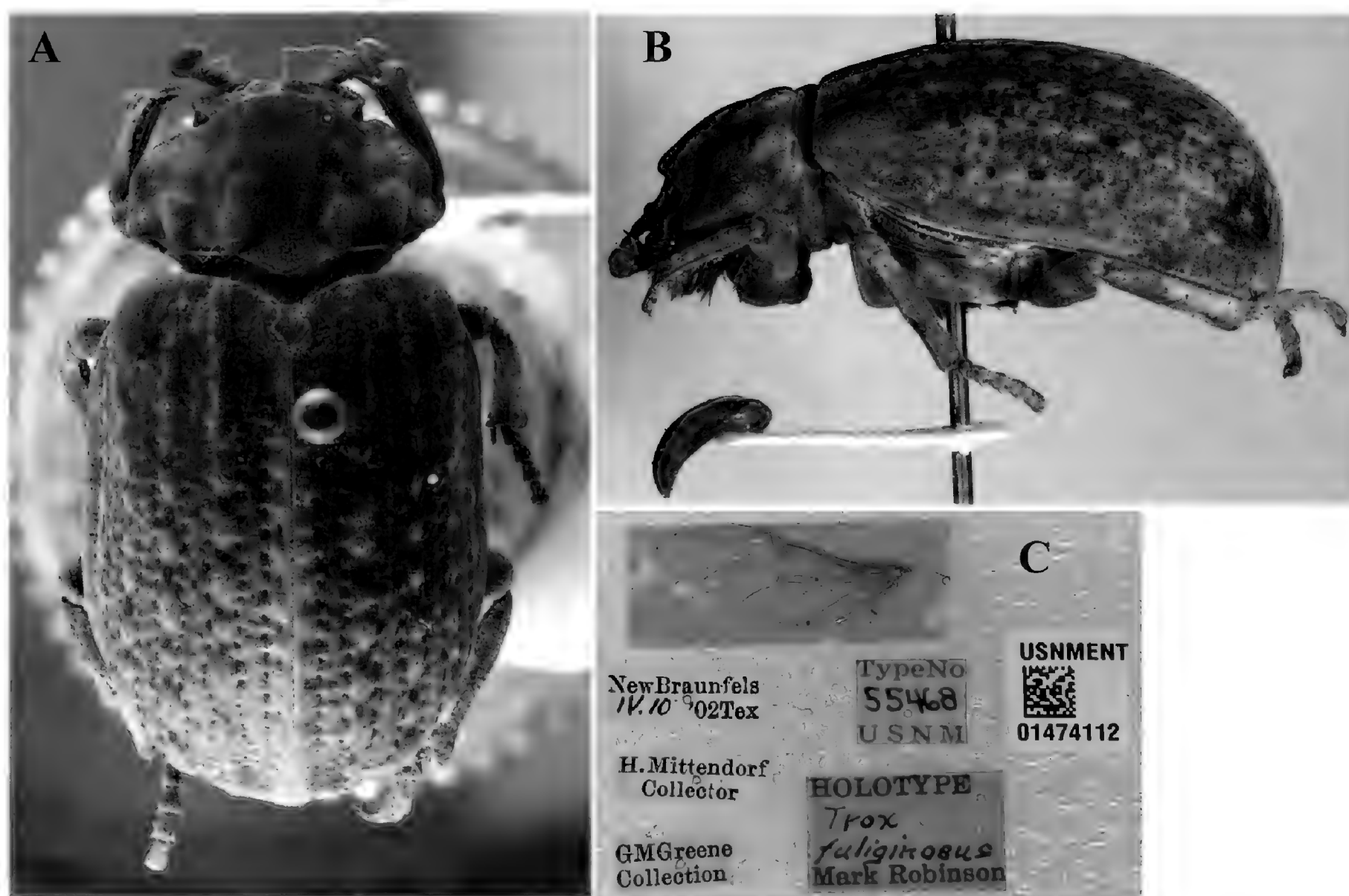
Upon reviewing the holotype of *O. capillaceus*, it became evident that the specimen is merely a worn variation of *O. fuliginosus*. While we concur with Scholtz’s observation of the glabrous elytral disc, this feature alone is insufficient for distinguishing Trogidae species without considering male genitalia. Trogidae specimens often exhibit significant intraspecific variation, and it is not uncommon to encounter specimens that are partially or entirely glabrous (or worn) in collections (V. Costa-Silva, personal observation).

Another factor that may have led Scholtz to describe a new species is the specimen’s locality: Bogota, Colombia. The holotype of *O. capillaceus* was associated with the label number “2275” (Fig. 12C), which corresponds to specimen from the Henry Klages Collection, acquired by the CMNCH on May 28, 1903 (Robert Androw, personal communication to VCS). However, as documented by Nearn and Androw (2013) and Costa-Silva et al. (2024), the Henry Klages collection has been noted for containing numerous mislabelled Nearctic and Neotropical specimens, including some cases of misidentification within the Trogidae (see Costa-Silva et al. 2024 for examples). *Omorgus fuliginosus* is known from the United States, Mexico, Guatemala, El Salvador, and Costa Rica (Vaurie 1955; Ratcliffe 1978; Deloya 2000), making its record in Colombia questionable, but not impossible.

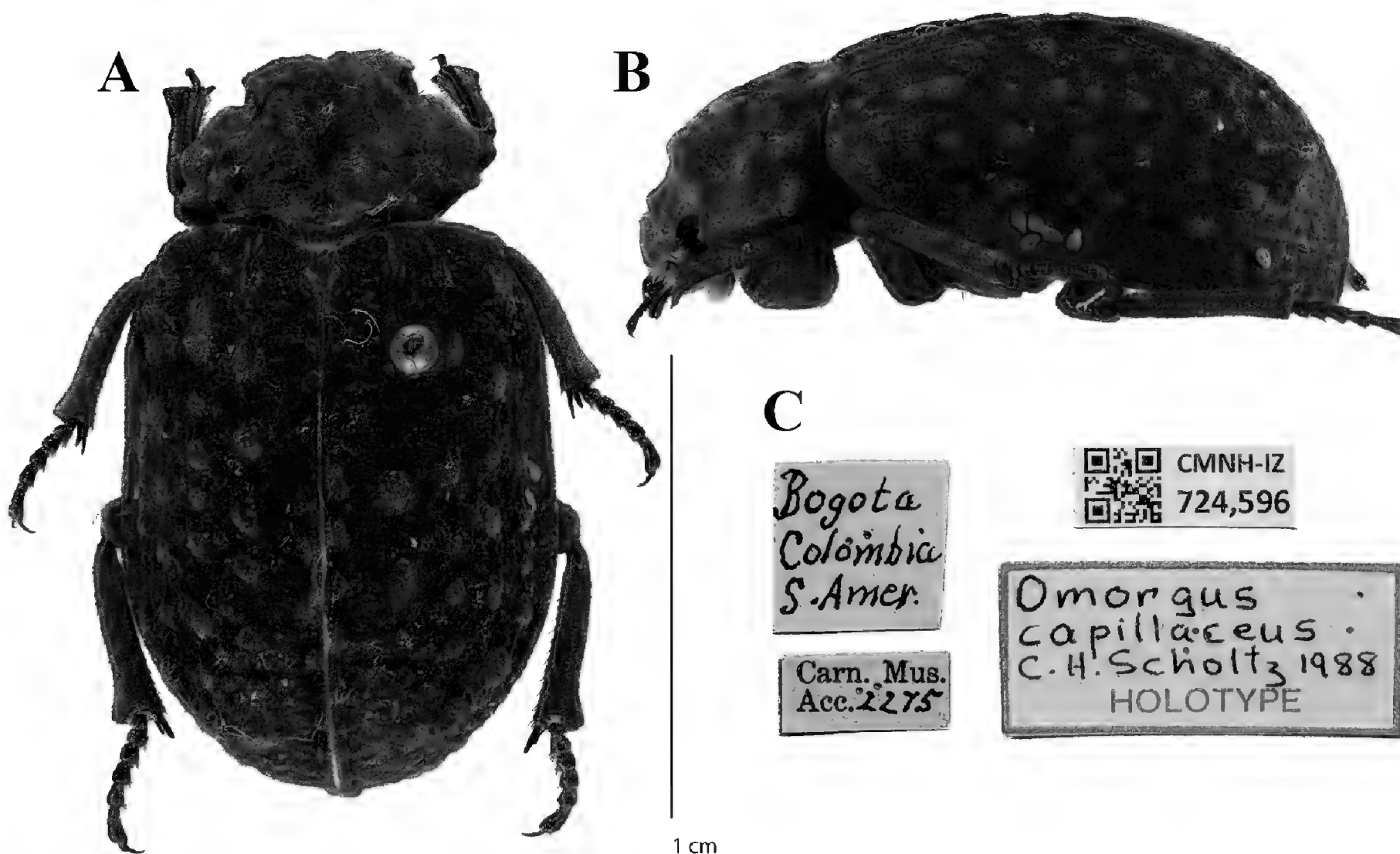
Therefore, we conclude that *O. capillaceus* should be considered a junior subjective synonym of *O. fuliginosus*, having been described based on a worn and mislabelled specimen from Bogotá, Colombia.

**Geographic distribution.** Costa Rica, El Salvador, Guatemala, Mexico, and United States (Vaurie 1955; Ratcliffe 1978; Deloya 2000).





**Figure 11.** Holotype of *Trox fuliginosus* Robinson, 1941 (now *Omorgus fuliginosus*). **A.** Habitus in dorsal view; **B.** Habitus in lateral view; **C.** Labels. Photos by Robert Finn (USNM). Length of specimen: 14–15 mm.



**Figure 12.** Holotype of *Omorgus capillaceus* Scholtz, 1990. **A.** Habitus in dorsal view; **B.** Habitus in lateral view; **C.** Labels. Photos by Vanessa Verdecia (CMNCH).

**Non-type examined material (9 specimens).**  
**MEXICO – Veracruz • 5;** Carr. Actopan, Passando la Desv. Idolos; 30 Aug. 1994; L. Arellano & R. Sanchez leg.; CEMT • 1; Carr. Alto Lucero, Km 2 Desviación la

Concepción; 18 Oct. 1994; L. Arellano & R. Sanchez leg.; CEMT • 1; Carretera Xalapa-Alto Lucera, 1 km de Espinal; 31 Aug. 1994; L. Arellano & R. Sanchez leg.; CEMT • 1; Catemaco, Parq. de la Flora y Fauna Silvestre

tropical; 29 Apr. 1990; F. Capistran leg.; CEMT • 1; Plan de Hidalgo, Mpio de Papantla; 19 Mar. 1997; R. Sánchez & M.E. Favila leg.; CEMT.

## Author contributions

Vinícius da Costa-Silva: Conceptualization, Methodology, Investigation, Resources, Data Curation, Writing - Original draft, Writing - Review and Editing, Visualization, Supervision, Project administration. Werner P. Strümpher: Methodology, Investigation, Resources, Writing - Review and Editing, Supervision. Maxwell V.L. Barclay: Methodology, Investigation, Writing - Review and Editing, Visualization. Fernando Z. Vaz-de-Mello: Investigation, Resources, Writing - Review and Editing, Visualization, Supervision.

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